

incider

Software

November
1986
USA \$2.95
Canada \$3.95
A CWC/I
PUBLICATION

A LOOK TO THE FUTURE

- Apple IIGS Innovations
- C: Today's Hottest Language
- GS Assembly Programming
- The Mac Look for the II

LET AN APPLE
CONTROL YOUR HOME

TRACE YOUR
ANCESTRY
WITH
APPLEWORKS



Introducing the Most Powerful Business Software Ever!

FOR YOUR IBM • APPLE • MAC • TRS-80 • KAYPRO • COMMODORE • MSDOS OR CP/M COMPUTER*

50% OFF!



The VERSABUSINESS™ Series

Each VERSABUSINESS module can be purchased and used independently, or can be linked in any combination to form a complete, coordinated business system.

VERSARECEIVABLES™ \$99.95

VERSARECEIVABLES™ is a complete menu-driven accounts receivable, invoicing, and monthly statement-generating system. It keeps track of all information related to who owes you or your company money, and can provide automatic billing for past due accounts. VERSARECEIVABLES™ prints all necessary statements, invoices, and summary reports and can be linked with VERSALEDGER II™ and VERSAINVENTORY™.

VERSAPAYABLES™ \$99.95

VERSAPAYABLES™ is designed to keep track of current and aged payables, keeping you in touch with all information regarding how much money your company owes, and to whom. VERSAPAYABLES™ maintains a complete record on each vendor, prints checks, check registers, vouchers, transaction reports, aged payables reports, vendor reports, and more. With VERSAPAYABLES™, you can even let your computer automatically select which vouchers are to be paid.

VERSAPAYROLL™ \$99.95

VERSAPAYROLL™ is a powerful and sophisticated, but easy to use payroll system that keeps track of all government-required payroll information. Complete employee records are maintained, and all necessary payroll calculations are performed automatically, with totals displayed on screen for operator approval. A payroll can be run totally, automatically, or the operator can intervene to prevent a check from being printed, or to alter information on it. If desired, totals may be posted to the VERSALEDGER II™ system.

VERSAINVENTORY™ \$99.95

VERSAINVENTORY™ is a complete inventory control system that gives you instant access to data on any item. VERSAINVENTORY™ keeps track of all information related to what items are in stock, out of stock, on backorder, etc., stores sales and pricing data, alerts you when an item falls below a preset reorder point, and allows you to enter and print invoices directly or to link with the VERSARECEIVABLES™ system. VERSAINVENTORY™ prints all needed inventory listings, reports of items below reorder point, inventory value reports, period and year-to-date sales reports, price lists, inventory checklists, etc.

VERSALEDGER II™ \$149.95

VERSALEDGER II™ is a complete accounting system that grows as your business grows. VERSALEDGER II™ can be used as a simple personal checkbook register, expanded to a small business bookkeeping system or developed into a large corporate general ledger system without any additional software.

- VERSALEDGER II™ gives you almost unlimited storage capacity (300 to 10,000 entries per month, depending on the system),
- stores all check and general ledger information forever,
- prints tractor-feed checks,
- handles multiple checkbooks and general ledgers,
- prints 17 customized accounting reports including check registers, balance sheets, income statements, transaction reports, account listings, etc.

VERSALEDGER II™ comes with a professionally-written 160 page manual designed for first-time users. The VERSALEDGER II™ manual will help you become quickly familiar with VERSALEDGER II™, using complete sample data files supplied on diskette and more than 50 pages of sample printouts.

FOR APPLE & MACINTOSH OWNERS ONLY!

Apple and Macintosh owners only may now take 50% off our listed price of any module(s) from our VersaBusiness Series. All sales are final (our normal 30-day money back guarantee does not apply to sale items).

To Order:

Write or call Toll-free (800) 431-2818
(N.Y.S. residents call 914-425-1535)

- * add \$3 for shipping in UPS areas
- * add \$4 for C.O.D. or non-UPS areas

- * add \$5 to CANADA or MEXICO
- * add proper postage elsewhere



DEALER INQUIRIES WELCOME

All prices and specifications subject to change / Delivery subject to availability.

COMPUTRONICS!

50 N. PASCACK ROAD, SPRING VALLEY, N.Y. 10977

Circle 66 on Reader Service Card.

We've got designs for Apple's® future.

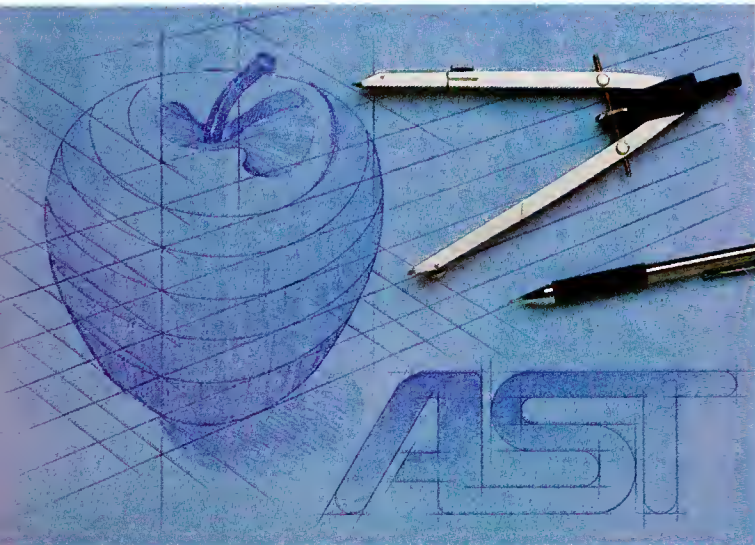
Apple is getting faster and more versatile. And with the introduction of the IIGs™, comes AST's state-of-the-art enhancements that not only support, but augment Apple's bold claim to the future. Our design formula: compatibility, flexibility and performance.

Complete compatibility. Throughout product development we work closely with

most advanced technology available. That's because our engineering staff represents several years dedicated to improving Apple computers beyond their original design.

All of AST's solutions for the IIGs, including the SprintDisk™ 1 MB RAM disk card and AST2000™ 20 MB hard disk/20 MB tape backup SCSI storage subsystem, incorporate AST's design formula. And our new, exciting memory and graphics products create new directions in personal computing.

For a complete layout on AST's Apple IIGs designs, contact your nearest AST authorized Apple dealer, or fill out the coupon below and send it to the AST Apple Products Group: AST Research, Inc., 2121 Alton Avenue, Irvine, California 92714-4992. (714) 553-0340. BBS: (714) 660-9175. FAX: (714) 660-8063.

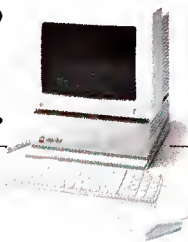


major hardware and software manufacturers to incorporate leading industry standards. With AST's Apple IIGs products, you can continue to count on instant compatibility with popular application software and peripherals.

Flexibility to suit your system needs. Our Apple IIGs products are expandable. You can buy the minimal configuration today and upgrade as your needs grow. Whether you work at home, school or in business, you'll find AST products designed to keep up with changing applications.

Enhanced Performance. When you buy an AST Apple product you buy the latest,

AST
RESEARCH INC.



Yes, I want more information about AST Apple IIGs innovations.

☐ memory ☐ storage subsystems
☐ graphics

Name _____

Title _____

Company _____

Address _____

City/State/Zip _____

Phone _____

AST Research, Inc. 2121 Alton Avenue
Irvine, CA 92714-4992

ATTN: Apple Products Group

11/86

MITAC AD-3C.

The leader in high performance drives.

**FOR ALL
APPLE® II
SERIES
COMPUTERS.**

In the crowded field of second disk drives for the Apple® II series computers, one drive stands out as leader of the pack — the MITAC AD-3C.

The AD-3C is MITAC's high performance, half-height drive that comes with cable connections to perfectly mate either the IIc or the II/II+/IIe. There's even a special adaptor to convert a IIc drive to fit the IIe.

Like world class racing cars, the AD-3C is built under exacting standards to be rugged and reliable. It boasts such advanced features as fast-start DC brushless direct drive

motors and long-life read/write heads. When it comes to performance, nothing overtakes the AD-3C.

And the AD-3C doesn't get beat out in the price competition, either. In fact, when it comes to quality and price, the AD-3C stands alone in the winner's circle.

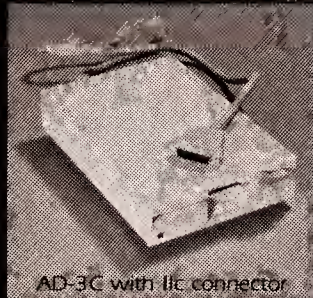
So don't settle for second best and risk getting stuck in the pack. Zoom out front with the MITAC AD-3C.

American MITAC Corp.

3385 Viso Court
Santa Clara, CA 95054
(408) 988-0258

**Toll-free Hotline:
800-321-8344**

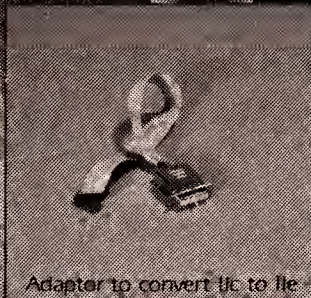
APPLE II/II+/IIe/IIc are registered trademarks of Apple Computer, Inc.



AD-3C with IIc connector



AD-3C with IIe connector



Adaptor to convert IIc to IIe

mitac

SYLVIA PORTER'S PERSONAL FINANCE SERIES MANAGES IT ALL

**Your day-to-day finances. Your financial future.
And now, your investments, too.**

Volume 1

Your Personal Financial Planner

Helps you track your day-to-day financial data, then combines this information with your future financial objectives to produce the most comprehensive and easily-understood financial planning program available.

For Your Day-to-Day Affairs:

- **Maintains your electronic check-book** and credit card transactions.
- **Writes your checks** and balances your checkbook.
- **Prepares and monitors your budget.**
- **Classifies and tracks your taxable income and expenses.**
- **Calculates your net worth and generates customized personal financial statements.**
- **Tracks your financial assets** – and your insurance policies.

For Your Financial Future:

Leads you step-by-step through a series of questions regarding your financial goals, and your current financial condition. Your answers will enable your computer to determine and print a summary of the amounts you must save each year to meet your financial objectives – in both real and inflated dollars.

Each SYLVIA PORTER program:

- **Interfaces with the others in the Series.** You need to enter data only once.
- **Generates unique graphic representations** that display your data in colorful charts.
- **Includes a Customized Report Writer** that prints out any report you want, tailored to your specific needs.



MORE POWER FOR YOUR DOLLAR

Timeworks, Inc., 444 Lake Cook Rd., Deerfield, IL 60015
312-948-9200

©1984 Sylvia Porter's Personal Finance Magazine Co. & Timeworks, Inc. All rights reserved.

Volume 2

Your Personal Investment Manager

Whether you're a first-time investor or a sophisticated one, this program enables you to efficiently organize, analyze, and manage up to 15 individual investment portfolios. (Unlimited on hard disk)

This Program:

- **Manages your investment transactions:** Records, organizes, and classifies all important data on your purchases, sales, and other types of investment transactions.
- **Tracks your investment portfolios:** Displays more than 35 kinds of vital statistical data, plus financial profiles on individual companies.
- **Alerts you to investment deadlines:** Transaction deadline dates for dividends and interest; buy and sell positions; bond maturities; and much, much more.
- **Tracks your retirement investments**
- **Monitors your investment taxes:** Tracks, organizes and classifies your interest and dividend income, and your capital gains or losses. Generates year-end reports.
- **Includes Telecommunications Access to outside Database Sources:** Lets you access all major outside databases for automatic price updates (modem required).
- **Includes Investment Strategies and Fundamental & Technical Analyzers**

**PLUS...
FREE**

**from DOW JONES News/Retrieval
Your Password and 1 Hour of Prime Time
(Value over \$120!)**

Suggested Retail List Price:

Apple* version: \$99.95 each

Available at your favorite dealer,
or contact Timeworks today.

**To Order Call:
1-800-535-9497**

*Apple is a registered trademark
of Apple Computer, Inc.
Circle 140 on Reader Service Card.



**CUSTOMER TECHNICAL SUPPORT
HELPLINE – Toll Free**
MONEY BACK GUARANTEE
Details on every package

Available for Apple II/III/IV/SE/IIx/IIcx/IIc/IIc+ (and compatibles). Apple requires 48K or more 6502 or disk II drive. IBM requires 128K, one disk drive, and a graphics card. Color monitor suggested for color views.

LUNAR EXPLORER

A Space Flight Simulator



- Out-the-window 3-D color views. See the lunar landscape, constellations, moon bases, and the Apollo 11 landing site.
- Flight origin from 3 vantage points: landing pad, close approach, lunar orbit.
- Lunar Landing Vehicle realistically simulates flight dynamics of future NASA spacecraft.
- Cargo Run Game. After training, become part of a Mobile Mining Team.
- 96-page illustrated training manual.

From the publishers of WILDERNESS:
A Survival Adventure.

ELECTRIC TRANSIT

501 Marin Street, Suite 116
Thousand Oaks, CA 91360
805/373-1960



Publisher: Terr Hamilton
Editor in Chief: Deborah de Peyster
Managing Editor: Dan Muse
Technical Editor: Paul Stett
Senior Editor: Eileen T. Terrill
Review Editor: Eric Grevstad
Copy Editor: Peter Bjornsen
Assistant Editor: Julie Low
Editorial Assistant: Bill Jacob
Field Editor: Babs Orngely

Advertising

Sales Manager/Northeast: Paul Bould
Sales Representative: (800) 441-4403
(603) 924-7138
Southeast and Central Sales Manager: Dale Strang
(800) 441-4403
Sales Manager/Northwest: Donna Pomponi
3350 W. Bayshore Rd.
Suite 201
Palo Alto, CA 94303
(415) 328-3470
Sales Manager/Southwest: Sanford L. Fish
3350 W. Bayshore Rd.
Suite 201
Palo Alto, CA 94303
(415) 328-3470
Sales Representative: Fiona Davies
Advertising Coordinator: Mary Hartwell
(800) 441-4403
Marketing Manager: Dawn F. Matthews

Design

Art Director: Donna Wohlfarth
Production Supervisor: Phyllis Pittet
Ad/Graphics Production: Rosemary Gibson

Graphic Services

Graphic Services Manager: Dennis Christensen
Manufacturing Manager: Susan Gross
Typesetting Supervisor: Linda P. Canale
Typesetter: Nancy Salwen

Special Products

Special-Products Director: Jeff DeTray
Special-Products Manager: Craig Pierce

CW Communications/Peterborough

President/CEO: James S. Povec
Vice President/Finance: Roger Murphy
Assistant General Manager: Matt Smith
V.P. of Planning and Circulation: William P. Howard
Circulation Manager: Frank S. Smith
Direct-Marketing Manager: Bonnie Welsh
Single-Copy Sales Manager: Linda Ruth
Direct & Newsstand Sales Manager: Kathy Boghosian
(800) 343-0728

Audits and Statistics Manager: Susan Hanshaw
Executive Creative Director: Christine Destrempe
Director of Credit, Sales, and Collection: William M. Boyer

inCider's BBS (bulletin-board system)
On line 24 hours: (603) 924-9801

inCider (ISSN #0740-0101) is published monthly by CW Communications/Peterborough, Inc., 80 Pine Street, Peterborough, NH 03458. Phone: (603) 924-9471. Second-class postage paid at Peterborough, NH, and additional mailing offices. (Canadian second class mail registration number 9590.) Subscription rates in U.S. are \$24.97 for one year, \$38.00 for two years and \$53.00 for three years. In Canada and Mexico, \$27.97—one year only. U.S. funds drawn on a U.S. bank. Nationally distributed by International Circulation Distributors. Foreign subscriptions (surface mail), \$44.97—one year only. U.S. funds drawn on a U.S. bank. Foreign subscriptions (air mail) please inquire. **Postmaster:** Send address changes to *inCider*, Subscription Services, P.O. Box 911, Farmingdale, NY 11737. (Send Canadian changes of address to *inCider*, P.O. Box 1051, Fort Erie, Ontario L2A 4N5.)

Photo & Illustration Credits: Cover: pages 46 & 47, 60 & 61, 68 & 69, Imagebuilder; pages 70 & 71, pages 84 & 85, Peter Bono; page 92, Malcolm Wells; page 176, Taurus Photos; Tim McCauley



ON THE COVER

46 Visions of GS Software

Will the new IIGS inspire software developers to create the kinds of programs Apple II users have been waiting for?

60 Exploring the World of C

Why is C the "official language" of the Apple IIGS? This compact, competent language combines the best of higher-level languages like BASIC and lower-level ones like assembly language.

68 Delving into Assembly Language

The GS's 65816 microprocessor opens up a powerful new world for assembly-language programmers.

76 Desktop Organizers

These three programs borrow a little style from the Macintosh and let you run your programs more smoothly.

ARTICLES

84 What Do These People Have in Common?

Whether you coach a Little League team or sell mobile homes, one of these seven data-base management programs will let you store and sort information easily.

92 Let Apple Take Control

Your Apple II can do more than the traditional applications. When it comes to running your household, an Apple is better than a butler.

101 Learn Languages with Logo

This month's free program listing uses the Apple II Logo language to help you learn a foreign language.

107 Trace Your Roots with AppleWorks

If you're plagued by questions about your family history, use AppleWorks to discover the deep, dark secrets of your ancestry.

TUTORIALS

AppleWorks in Action 118
Publishing a Company Newsletter
by Ruth K. Witkin

Applesoft Adviser 124
Data-Base Arrays
by Dan Bishop

Teachers' Choice 130
Testing the AppleWorks Data Base
by David Goodrum and Joel Robbins

Pascal Primer 136
Large-Program Tools—Part 1
by Tom Swan

DEPARTMENTS

inCider's View 6
Risky Business
by Deborah de Peyster

Letters 8
News Line 18

To Russia, with Apples; Students' Winning Ideas; New Developments in Home Control; Spanning the Globe

Apple Clinic 22
ProDOS and AppleWorks; Noise Pollution; Color Questions and Memory; Wrong Reference; Music in His Soul; Get Smart; It Couldn't Be Done; BBS Update; AppleWorks Wide; Disk, Disk
by Paul Statt

Reviews 30
MultiScribe; ProModem 1200A and AppleMate; Tobacco and Fitness; Fleet System 3; AutoWorks; MIDI Users Sequencer/Editor; The Handlers; B-Sider

Status Report 148
Déjà Vu
by Paul Statt

E.G. For Example 150
Erotic Software
by Eric Grevstad

New Products 152
Game Room 161

Amnesia
by Brian J. Murphy

Hints/Techniques 164
Binary-to-Text Revision; Word-Processor Data Base; Recovering WordStar Data; Applesoft Decimals

Coming Attractions 174

Reader Services 174

Editors' Choice 176
VIP Professional:
Lotus Blossoms for the II

INCIDER'S VIEW



Risky Business

"Mail order is only as good as the company with which you're dealing."

by Deborah de Peyster

Ronald Compton wants to buy his son a new printer and some software for Christmas. He places his order with a mail-order firm in mid-November and is told the present will arrive soon. Compton's charge card is billed only six days later for the full \$343, but the gift doesn't arrive. He waits, starts to get nervous, and phones the mail-order company once, twice, then continually. It seems he's getting nowhere fast, and time is quickly running out.

Christmas Eve; the gift hasn't arrived. Compton is out the \$343 and has yet to make contact with anyone at the mail-order firm who follows through on delivery of the product or return of his credit.

"To say that my son's Christmas was a disaster is an understatement," Compton wrote to us last year.

Well, the buying time of year is upon us again, and we want you to know that Ronald Compton was hardly alone in his frustration. During the past year, we've received many letters from you telling us of your troubles in buying through mail order. Many of the problems are similar, and many are with the same mail-order firms.

Although not the company with which Compton had difficulty, a frequent subject of your letters is Northeastern Software, of Shelton, Connecticut. Northeastern general manager George Sutyak acknowledges the firm has had trouble filling orders efficiently and returning credit quickly. A move to new headquarters in March and rapid growth of the company were at the root of these problems, he says. An automated inventory, order-taking, and purchasing system put in place in August should help solve them, he reports.

But Northeastern is only one of more than 20 computer-equipment mail-order firms with which you might choose to do business. De-

pending on your luck, you might have a good experience and receive your order quickly at a reasonable price, or end up like Robert Hildreth, another reader who wrote to us citing statistics such as 30 phone calls in four months, 14 hours on hold, and still no refund for products never shipped.

Many mail-order firms are experiencing rapid growth, and many aren't handling it successfully. Some won't be in business next year, or maybe even next month. But some very good, reputable mail-order firms are out there, and we think it's worth your while to find them. So here's some advice from *inCider* on reducing the risk of ordering computer equipment and supplies through the mail.

First, spend some time talking to friends. Ask them where they got the best service, not the lowest price. You should also call your local computer club or user group for recommendations. Some computer clubs (such as the Boston Computer Society) even put out bulletins warning users about firms that may cause trouble.

Call the company; before you place an order, ask a few questions about the product in which you're interested. If you get a courteous reply, that's a good sign. If you get a courteous *and* intelligent reply, order right away!

Also make sure you ask about promised delivery and return policies, and, whenever you order anything through the mail, take notes throughout your conversation. Record the day and time you called, the name of the person who placed your order, and any guarantees the company makes about delivery, return, and quality.

We believe mail order is a good way to buy products, but it's only as good as the company with which you're dealing. That's the key to making mail order work for you. Good luck. ■

BRIGHT IDEAS

Orange Micro® Innovations for the Apple® IIgs

The Revolution Continues

For over six years Orange Micro has demonstrated an unequalled ability to convert bright ideas into the high quality Apple innovations that you require. Products for the Apple II+, IIe and IIc and most recently the ImageWriter™ II have consistently been top sellers, and have enjoyed the support of experts and software publishers alike. With the new Apple IIgs computer, Orange Micro is again leading the way with three exciting new ideas to enhance your new Apple system.



RamPak 4Gs™

Memory Sub-System

Orange Micro's new **RamPak 4Gs** delivers unprecedented memory expansion capacity and powerful memory management utilities. With 512K of RAM standard, the **RamPak 4Gs** is socketed and ready for an incredible *four megabytes* on a single card. But it's far more than just a simple memory card. The **RamPak 4Gs** also includes powerful software for RAM Caching, Dynamic Memory Allocation, and utilizes Apple's RAM Disk. These features not only assure the most efficient use of your system memory in any application, but they can increase your processing speed dramatically.

A Commitment to Innovation and Excellence

These high quality products represent Orange Micro's continued commitment to Apple and the landmark Apple II series of computers. Our development efforts are, and have been, totally dedicated to bright ideas for Apple Computers. We've been dedicated to it for years and we aren't going to change now. So when you pick up your IIgs, take a look at us. Enhance your system with solutions from Orange Micro.

ProGrappler

Intelligent Printer Interfacing

Parallel printing is fast, and now the new **ProGrappler** represents the hottest technology in parallel



printer interfacing. Screenshot capability (IIgs only) lets you print screens for most popular software packages. New pull-down menus accept either mouse or keyboard input, allowing you to easily select your printing options right on the IIe or IIgs screen. We've also added printer set-up, so you can select your printer's special features without complex commands or special codes. All the commands of the original Grappler+ have been kept intact, ensuring compatibility with the thousands of software products supporting the Grappler. Go with the **ProGrappler**, the most powerful parallel printer interface available.

COMING SOON: IIgs Maintenance System

Your new Apple IIgs will require proper care, and Orange Micro's **maintenance system** has everything



you need to keep your system running strong. The **maintenance system** provides surge protected power for your Apple IIgs and any two additional peripherals from a single convenient switch; a third unswitched power outlet; a powerful fan to provide filtered, cooling air; and an hour meter that tells you how long your system has been powered up. We have even included a guide of scheduled maintenance for use with the hour meter to help you properly care for your new computer. The **maintenance system** is a complete package that lets you relax knowing that your new investment is well protected.

 **Orange Micro**
inc.

1400 N. Lakeview Ave., Anaheim, CA 92807
(714) 779-2772 Telex: 5101001014 ORANGE MICRO

Help for AppleWorks

The AppleWorks User Group (TA-WUG) is an organization specializing in the AppleWorks program. We maintain a clearinghouse of AppleWorks templates and currently have more than 28 disks of templates for the data base and spreadsheet, as well as notes and comments about the word processor. These disks also contain member-submitted reviews of AppleWorks-compatible programs and related books and magazines. In addition, we have a collection of public-domain utilities that enhance AppleWorks.

TAWUG maintains an AppleWorks subboard on a BBS called The Board at (303) 756-5222. We have an AppleWorks discussion group, and you can download the latest templates. For more information and a price list, please send a self-addressed, stamped envelope to the address below.

The AppleWorks User Group
P.O. Box 24869
Denver, CO 80224

More Storage

While the recent trend in office (group) computer communication has been directed toward problems associated with networking, not all groups are looking for this level of sophistication. We are a biomedical research group of six Apple users, and have recently been contemplating the purchase of an equal number of hard disks. In examining our possibilities, we concluded that the easiest way for all of us to have access to a large amount of disk space would be with a mass-storage/multiplexor system.

Having read *inCider* since its inception, I went searching through my back issues looking for reviews or product information. Unfortunately, it appears *inCider* hasn't looked into these types of "network" systems.

I came across the following product while searching for a system to fulfill our needs. It's a Winchester mass-storage system with up to 84 megabytes of formatted disk space that can be shared by up to 16 users. It's manufactured by Space

Coast Systems, 301 South Washington Avenue, Titusville, FL 32796, (305) 268-0872. I'd like to know if you have any plans to review mass-storage/multiplexor systems like this one.

The introduction of RAM boards has allowed Apple Computer and third-party developers to create larger, more sophisticated applications. However, there must be a place to store the output of these packages. While individual hard disks solve one person's problems, they aren't the most cost-effective solution for groups of users.

Jeffrey K. Ekstein
Department of Anatomy
Boston University School of Medicine
Research Building, Room 1014
80 East Concord Street
Boston, MA 02118

No doubt the IIGs' AppleTalk will stimulate interest in networking and smaller shared-resource solutions such as yours. We'll stay alert for possible review coverage, but remember that the majority of our readers are solitary Apple users. (Readers: What do you think?) —eds.

Japanese Spoken Here

Do you know of any Apple IIe software for learning either written or spoken Japanese? I'd be interested in knowing how much such a package would cost and where I can get it.

Frederick S. Vassie
8821 Tidesebb Court
Columbia, MD 21045

We searched through all our resources and found plenty of programs for learning Spanish, French, German, Hebrew, Italian, and Russian, but none for Japanese. Do any readers know of such a program? —eds.

The Taxman

I'm the proprietor of a medium-sized tax practice. When I bought my Apple in 1982, I also purchased a software package called Tax Manager, produced by Micro Lab of Skokie, Illinois. This year when I applied for an update of the software, I found that Micro Lab is no longer in business.

I won't be in business long enough (I plan to retire in a few years) to justify getting all new hardware to run more sophisticated tax software, so I'd like to know if any software company has a program similar to Tax Manager. Tax Manager ran on my Apple II Plus, computed and printed 14 forms, and was very easy to use.

John J. Ritz
P.O. Box 337
West Long Branch, NJ 07764

Check our article "Tax Time Can Mean Returns" (April 1986, p. 44), for a comparative review of seven tax-preparation packages. One of these programs should suit your needs.

—eds.

In Search Of

I'm searching for genealogy software that's compatible with an Apple IIe computer. Can you help me with this?

Roxwell Prejean
Route 1, Box 1548
Abbeville, LA 70510

Check out our June 1986 New Products section. "Roots" (p. 112) is a description of Personal Ancestral File, a genealogical record-keeping program from Ancestral File Operation Unit. Also take a look at "Trace Your Roots with AppleWorks" in this issue (p. 106). —eds.

Still Waiting

I'm wondering if you know anything about the word processor Multi-Scribe and the company that produces it, StyleWare. You ran its advertisement in the April and May 1986 issues of *inCider*.

The introductory offer for Multi-Scribe was listed in the April issue at \$39.95. The May issue reported it as \$59.95. The \$39.95 sounded like a good deal to me, so I ordered it on March 11th. Since then, I've heard nothing—the only response I've received so far is my cancelled check. It cleared the bank within a week of my order. The company has my money; I have nothing.

A Strange Woman Wants to Marry You.

An unknown man is trying to kill you. The State of Texas wants you for murder. But that's not your problem. Your real problem is...

AMNESIA

It's a new text adventure that feels like a Hitchcock-style nightmare. You're lost on the streets of Manhattan with no money, no friends, no memory—and someone wants you dead. Somewhere in The City are the clues to your identity—and your survival. The hard part is finding them—and eliminating your problems before they eliminate you.

You are locked in a cell. It is bare and dark and smells of lives gone sour. The only light is a feeble fluorescent glow that slants in through the louvered grill on the iron door. You know the door is iron because you have been beating on it. Your hands are sore, and your right eye is swollen shut. You ache all over.

—Ask the guard for some food, thank him, then eat it and go to sleep.

A 1700-word vocabulary recognizes complicated commands in plain English.

It feels great to be a faceless, nameless atom among a million others churning about in the grid of Manhattan's streets. It feels safe. As you approach Fifth Avenue, the brief buoyancy of feeling free gives way to ordinary now-what anxieties. You've got no money, no credit cards, nowhere to sleep, and no visible means of support.

—Beg for money, then enter the subway station.

It's Manhattan on four disk sides! Over 4000 locations to explore, including 650 streets and the entire Manhattan subway system.



We think it's the best writing ever in a text adventure.

It was written by award-winning novelist Thomas M. Disch—not a team of computer programmers. In addition to his 1980 Campbell Award for *On Wings of Song*, Disch's works have won major awards in England and Japan. The game's 300-page manuscript is the most ambitious ever in interactive fiction.

"A robust writer... a virtuoso."—New York Times Book Review

"...perhaps the most respected, least trusted, most envied... of all SF writers of the first rank: his reputation can only grow."—The Science Fiction Encyclopedia



ELECTRONIC ARTS™

How to order: Visit your retailer. If you are unable to find the product at your local retailer, you can call 800-245-4525 for direct VISA or Mastercard orders (In CA call 800-562-1112). The price for direct purchases is \$44.95 for the Apple and IBM versions, \$39.95 for the Commodore version. To buy by mail, send check or money order to Electronic Arts Direct Sales, P.O. Box 7530, San Mateo, CA 94403. Add \$3 for shipping and handling (\$4 Canadian). Allow 4 weeks for delivery. There is a 14-day, money-back guarantee on direct orders. For a complete product catalog, send 50¢ and a stamped, self-addressed #10 envelope to Electronic Arts Catalog Offer, 1820 Gateway Drive, San Mateo, CA 94404. Commodore, Apple, and IBM are registered trademarks of Commodore Business Machines, Apple Computer Inc., and International Business Machines, Inc., respectively. Thomas M. Disch's *Amnesia* and Electronic Arts are registered trademarks of Electronic Arts.

Is StyleWare a legitimate business? Does it have a product? After nearly seven weeks, I feel I have a right to at least have my order acknowledged with some notice of a reason for the delay. Seven weeks without response, without my merchandise, and without my money is a little unreasonable, don't you think?

Bill Kollasch
332 South Main Street
Aztec, NM 87410

StyleWare did have some delays in shipping MultiScribe, but is indeed shipping the product now, as the following letter will attest. See inCider's review of the product in this issue, p. 30. —eds.

Just My Style

After less-than-successful experiences in the past when I've had problems with hardware and software companies, I'm happy to write about a company that cares about its customers.

I first saw an advertisement for MultiScribe (from StyleWare, Houston, Texas) in the March *inCider*. I immediately called the toll-free number to place my order. I was number 39 on the waiting list. Company representatives told me the program wouldn't be released until the middle of March because of a wait for printing and packaging.

After a couple of months, I still hadn't received my copy of the program, and decided that maybe such a //c program—one that emulates MacWrite—was too good to be true. In a few weeks, though, the program finally arrived and I put it through its paces. I was delighted with its performance, but disappointed that it was copy-protected and couldn't be used on a UniDisk 3.5, should I add one later. It also had a bug that caused the disk drive to sometimes make a funny noise.

I put off calling customer support, as I was sure the noise was my fault. Then, less than two weeks from the day I got the program, I received a new version without copy protection. The update was free and the bug was gone.

Ron Kolman
WNCO AM-FM Radio
1051 Parkview Circle
Ashland, OH 44805

The Word Is Out

I purchased SpellWorks from Advanced Logic Systems in February of this year, and after using it only about a dozen times, lost the program. I've been attempting for months now to get ALS to replace it—with absolutely no success.

At one point, ALS called and asked me to return the faulty disk, which I promptly did. I was assured I would receive a replacement, which has never been sent. I've written several letters, trying to determine the status of my disk, but my correspondence hasn't been acknowledged.

I've since purchased other programs that perform the spelling and mail-merge functions (without leaving AppleWorks, I might add) SpellWorks handled, but I'm still out \$50 for the original purchase.

I think it's time software users sent a message to outfits like ALS. The word is out—either support and service your products or take them off the market, because nobody is going to buy them. Fortunately, there are quality magazines like *inCider* that support their readers and guide them through the minefield of "would-be" software publishers.

Donald P. Gagnon
59 Sayles Hill Road
North Smithfield, RI 02895

Action with AppleWorks

Your response to Roser Salavert (Letters, July 1986, p. 8) indicated that AppleWorks could print only one label across, not three as he was hoping. But I've found that with a little outside help, AppleWorks can be made to print three labels across.

Type in the category information for all records of the data base as described in the article ("Customer Mailing Labels with AppleWorks," March 1986, p. 54), and store it in a temporary ASCII file. To do this, press open apple-P, and choose option 3 on the report menu to create a new label format. Then enter a name for the new report. When Report Format appears, don't bother to change the categories. Go on by pressing open apple-P; select the ASCII file (option 4) rather than your printer. Enter a pathname for your file and print the data base to the temporary ASCII file on disk.

Return to the main menu and create a new file for the data base. For categories per record, enter the num-

ber that's three times what you need for each label (24 categories instead of eight, for example). Type the pathname for the temporary ASCII file you've just created, then name your new data base Three.Names.

Press open apple-P to bring up the report menu. Create a new "labels" format, and name the report Labels. When Report Format appears, move the categories so that the three labels contained in the 24 categories of the first record will be arranged properly across the top of the page (eight categories per label). When you've arranged the categories with the appropriate spacing and selected your printer options, you're ready to print.

This method may sound complicated, but it's really quite simple. The added convenience of printing three labels across is well worth the few extra steps.

Judith Classen
1615 La Cabra Drive
Albuquerque, NM 87123

Grading with AppleWorks

My mother, a high-school English teacher, and I have been using AppleWorks to calculate grades for the past year. Listing the students' names down, as suggested in "Making the Grade with AppleWorks" (August 1986, p. 63), rather than across isn't very convenient. When you add a few grades, the grades for one student are spread across many screens. When you try to print a listing of grades, it becomes difficult to tell what a certain student earned on any particular test.

If you put the students' names across the top of the screen and list the tests down, the spreadsheet is easier to understand after it's printed. Each student's grades appear on a single sheet, instead of spread over many. Also, if you want to make a copy of the column with the list of grades on the left side of the page, it's easier to tell how a student earned the final grade he or she received.

Chris Gallagher
7627 Chatham Road
Medina, OH 44256

Wrongs of Assembly

Your June 1986 Right of Assembly may have frustrated potential assembly programmers beyond hope. Each of the listings (pp. 91 and 96) has

A disk each month delivered to you... packed with ten programs for your Apple.

DISCOVER UPTIME. You deserve the best from your Apple. Have the best and save the most with UPTIME.

We make it easy and inexpensive — a disk each month. You deserve value. At UPTIME we believe in value. That's why each month 21,000 people like you enjoy a disk packed full of programs and information.

Make your life easier & get more from your computer. Organize your life and be more productive with **home management** and **finance programs**. Have fun learning with our **educational** programs and fun relaxing with **games** and **adventures**. You'll find **business, graphics, utilities** & more!

Ten programs and more on every disk.

What's the opposite of "downtime"? It's UPTIME, of course. Just imagine...a disk each and every month, delivered right to your door and packed with programs for your Apple.

Subscribe now, with our introductory offer!

Make the very next disk yours! Fill in the coupon and return it to us, or simply call. We'll start your subscription immediately, in addition to sending you...

**17
FREE
PROGRAMS**

Put work gloves on your Apple with **UTILITY TIME** — 17 programs including *Banner Maker*, *Musical Keys* and *Graphix Fun*. For **immediate service**, call toll-free: **1-800-437-0033** anytime, day or night.

**LESS THAN
60¢ PER
PROGRAM**

NOW

FOR ALL
APPLE II
COMPUTERS



FROM **Volume 11, No. 1**

Micro Crossword Puzzle ■ Disk Verifier ■ Line Runner ■ Einstein Energy ■ Millisecond ■ Calorie Counter ■ What To Take ■ The Arcade ■ Ellipsoid Maker + more!

Circle 15 on Reader Service Card.

**I'LL BYTE!!!
SAVE 60% → 12**

I'm an Apple enthusiast who wants more. Please start my subscription to UPTIME immediately.

Name _____

Address _____

City _____

6 Disk Issues \$48.00 ☐
(Add \$2 per issue in foreign countries, except Canada and APO)

3 Disk Issues \$30.00 ☐

1 Disk Issue \$11.95 ☐

☐ Please send my **FREE Utility Time** disk (\$18.45 value)
☐ Payment enclosed. (Make checks payable to UPTIME.)
Bill my: ☐ Visa ☐ MC ☐ Exp. Date _____
Signature _____
Account No. _____

Send to:
**UPTIME • PO Box 299
Newport, RI 02840
(401) 849-4925**

some serious errors. After reading the article, I looked up the correct codes in a manual. The following corrections should be made:

Listing 1

```
0309: C9 C1
```

Listing 2

```
KYBD EQU $C000
```

```
0303: AD 00 C0
```

```
0308: 90 F9
```

Listing 3

```
KYBD EQU $C000
```

```
0303: AD 00 C0
```

Actually, this complaint gave me an excuse to write and tell you how much I enjoy *inCider*. I think it's the best Apple II magazine published today, and I often recommend it to new members of our user group.

Michael Skroch

P.O. Box 5344

Madison, WI 53705

REMEMber This

REM statements in programs aren't always innocuous. I added the following two lines to the program Flexigraph (March 1986, p. 52):

```
3 REM Flexigraph
```

```
5 REM inCider 3/86, p. 52
```

Then I typed in the balance of the program and ran it. The program ran to just before the graph plotting and displayed "Undefined Statement Error in 720."

The text advises readers to type in lines 10 and 20, followed by CALL -151. Without the 3 and 5 REM statements, the machine-language display for lines 10 and 20 was the same as the author's Listing 2. With the 3 and 5 REM statements, the machine-language display was different.

I changed the REM statements in lines 3 and 5 to 1500 and 1510 REM, and the program runs perfectly. Be forewarned that REM statements may sometimes cause problems.

R.F. Heinzerling

145 Stonehouse Road

Glen Ridge, NJ 07028

Doctor in the House?

We appreciate your favorable review of HouseCall (May 1986, p. 51), but want to point out that your reviewer, Cynthia Field, made an error when she implied that HouseCall wasn't prepared by a medical doctor.

The program was indeed created under the direction of Dr. Richard J. Rosenbaum, M.D., who has been certified in pediatrics for ten years, and was a general practitioner for four years. Dr. Rosenbaum is head of our medical-research staff.

Other generalists and internists participated in reviewing HouseCall as it was being written. Each of the more than 400 information screens on medical topics was written specifically for HouseCall by a physician. Your reviewer also neglected to mention the interactive nature of HouseCall, which sets it apart from a typical medical-reference manual.

We understand how this error may have come about, as we had no communication with Ms. Field about HouseCall. In general, I'm certain this is the fairest way for a writer to review a product, to eliminate prejudice and advertising pressure. We feel *inCider* and its editorial staff are top-notch.

David J. Lester, President

Rocky Mountain Medical Corporation

5680 South Syracuse Circle

P.O. Box 4783

Greenwood Village, CO 80111

Easy BASIC Editing

I've found a way to use the AppleWorks word processor for editing BASIC programs. Once the word processor is set up, type in the program. The lines don't have to be in order, and the spacing doesn't matter. When you're finished, type this line:

```
0 INPUT A$:GOTO 0
```

Then press open apple-P as if you were going to print the file. Select option 3, Print to a text (ASCII) file. Then get into Applesoft by typing EXEC *filename* at the prompt. The computer reads the file, and brackets start moving up the screen. After a few seconds or more, depending on the length of the program, get rid of line zero, type LIST, and your program is ready to use, just as if it had been created in Applesoft.

Aaron Reeves

P.O. Box 447

Simla, CO 80835

Pascal Bugs

As a Pascal instructor, I've been following your Pascal Primer series with great interest. I enjoy finding materials other than manuals and textbooks that discuss Pascal programming.

In "Facts on Filer: Part 4" (February 1986, pp. 76-86) the author described a bug in the Pascal compiler. Let me describe a bug in the article.

The article says the declaration

TYPE

```
TWENTYREALS = ARRAY [20..40] OF REAL;
```

sets up a frame of 20 cells each of type real, hence the name TWENTYREALS. If it had been [21..40], I would certainly agree with you, as subtracting 20 from the starting index and the finishing index would give the more familiar [1..20], which clearly has 20 elements. The formula I use with my students, the difference between the starting index and the finishing index plus one, shows that your declaration involves 21 cells.

Please continue your interesting column on Apple Pascal. Perhaps you'd consider writing an introductory column on Apple Fortran also.

Sharon Maggiore

29 Route 299 West

New Paltz, NY 12561

Tom Swan replies that you correctly pointed out an error in the array declaration in February's Pascal Primer. The declaration should have read:

TYPE

```
TWENTYREALS = ARRAY [20..39] OF REAL;
```

Thanks to you and your students for finding the bug. —eds.

Integrated Teaching

Your education article "A Computer For Every Student" (July 1986, p. 58) raises some interesting questions concerning the use of personal computers in our schools. One question it didn't raise, however, is why schools and educators aren't planning to combine the best hardware and software and integrate it into existing and future curricula. If this was done, the personal computer could be used as a "support tool" for learning. In your article, it appeared that schools were choosing to decide who and what is best.

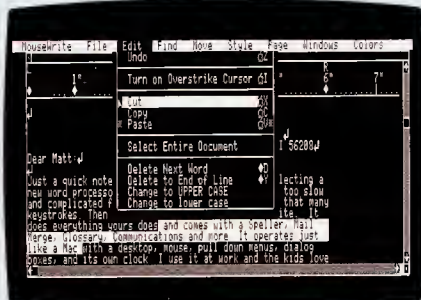
I know educators have been working hard to fit good hardware and software together into an interactive scheme. They're taking Seymour Pap-

There Are a Lot of Great Reasons to Own MouseWrite...

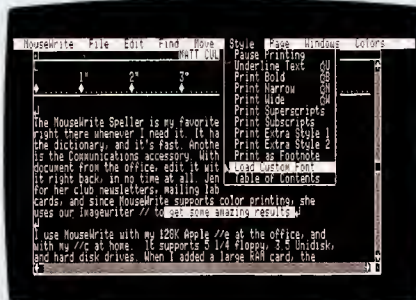
Reasons like being able to quickly correct any mistakes with MouseWrite Speller. It's built-in so it's there whenever you need it. Want form letters, labels, or 1000 individually addressed envelopes? MouseWrite's Mail Merge and Glossary get the job done for you.

Put pizzazz in your printouts by selecting anything from Color to Custom Fonts. Save time with Print While You Work. Get in touch with the world with MouseWrite Communications. 12 more great reasons are the 12 documents you can open at once on the Expanded Desktop.

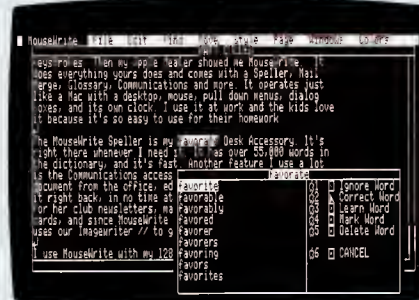
"Cut, Copy, Paste & Undo with Mac-like pull down menus"



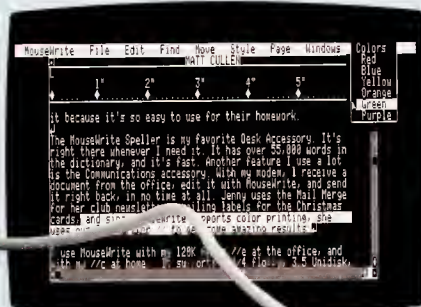
"Add style to your writing with downloadable Custom Fonts"



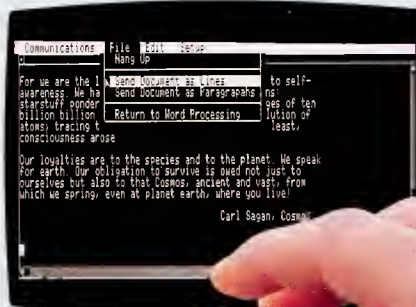
"Correct errors fast with the integrated MouseWrite Speller"



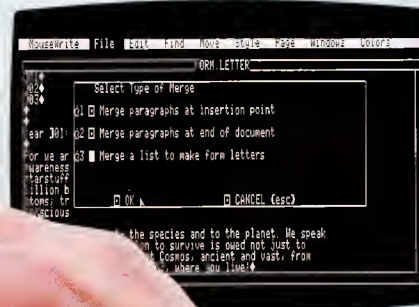
"Make a splash by adding color with ImageWriter II and others"



"Send and receive files with built-in Communications"



"Form letters in a flash with Mail Merge"



MouseWrite will also load AppleWorks documents directly, or even your old DOS 3.3 Text files. It works with your 5-1/4" disk, Unidisk 3.5, hard disk, or Extended RAM card.

Suggested Retail Price: \$149.95

Ask your local dealer, or get all the details in the fact-filled MouseWrite brochure by calling:

800-421-6526 IN CA 619-562-3670

MouseWrite requires an Apple IIc or 128k Enhanced Apple IIe / Apple, Appleworks, ImageWriter are trademarks of Apple.

RWPI Customers: Special Update Prices are available on many RWPI products. If you're not registered, please write now with your name and product owned to receive complete update instructions.

Roger Wagner
PUBLISHING, INC.

ert's, Tom Snyder's, Broderbund's, Apple's, and Springboard's programs, along with printers, modems, graphics pads, and BASIC programming, and combining them with other rich educational materials and themselves—"humanware." This lets teachers use personal computers in a flexible fashion—computer labs, demonstrations with large and small groups, team simulations, in classrooms, and in teacher's work areas for management and recordkeeping, for example. This integration lets students and teachers have more access to the personal computer and to various areas of curriculum (art, music, math, reading, writing, and so on).

This combination of good software, hardware, and "humanware" appropriates the personal computer so that it becomes a flexible tool, not a static machine. Given the problems we face in education, the best use of the personal computer is in flexible configurations with flexible educators. We can't afford to choose sides and miss the opportunity of the "imagination machine."

Frank Watson
RFD #1 Box 378
Underhill, VT 05489

Software Suggestions

I'm writing in response to your article "What's Going Wrong in Classroom Software?" I'm constantly looking for various kinds of software to use in my high-school Introduction to Data Processing course, but there's no way our school district can afford so many disks for such short-term use.

Fortunately, our regional consortium is located within our building, as is the district software library. When I borrow materials from those sources, I tell my classes they can use the software for the week or two I've checked them out. I always get the comment that "Joe" has a copy program, or that since I teach such a class I should certainly be able to copy the programs. I try to explain that if students are allowed to copy programs, it's like telling them it's okay to cheat on tests or copy homework.

You hit the nail on the head when you mentioned that budget constraints and class size compound the problem. It's difficult with today's teenagers to expect the majority of the class to "keep busy" while I'm explaining application software to a small group. Since some of your staff seem to be

former teachers, they'll probably remember that students don't follow directions particularly well without help.

I hope software publishers won't curtail producing good educational programs. Perhaps some of the following suggestions can help:

- 1) Furnish at least one back-up copy with each program purchased, or allow one back-up copy to be made as part of the program configuration. I don't mind buying software, but I cringe whenever my "only copy" is momentarily out of my sight.
- 2) Publish software that has short projects—particularly in word processors, data bases, and spreadsheets—where the documentation is on a driver disk and students can save their results to another disk. This is probably one of my biggest needs.
- 3) Publish educational versions of some of the leading programs with simple documentation. MECC, Sunburst, and South-Western Publishing are doing this to some extent, but more needs to be done.
- 4) Some excellent educational games available at the elementary level need to be expanded to the high-school level, or have the age level on the packaging removed. Some elementary programs challenge some of my high-school students, but they don't relate to them if they think they're for younger children.

I wish I had a concrete answer to the problem. It's frustrating for dedicated teachers to try to meet the needs of an entire class. Teachers' salaries don't allow for extensive purchase of these kinds of materials for classroom use—even with some of the tax breaks in the past. School districts must be allowed to purchase multiple copies of inexpensive software with copying rights or some other arrangement so teachers can use them freely. Otherwise, students will miss out on many excellent computing experiences, and students are why most of us are in the classroom.

Cindy Davies
Business-Education Department
Lamphier High School
Springfield, IL 62704

Backing Up

I completely agree with your staff's contentions in "What's Going Wrong in Classroom Software?" (August 1986, p. 56). Teachers who illegally copy educational software should be

arrested as the criminals they are. But I believe the article failed to address one critical point: Teachers not only have a right, but a need to back up all their software for archival purposes.

The school computer lab is a completely different environment from the home or office. One teacher has to supervise as many as 24 students with computers and software disks. Those inquisitive, inexperienced hands, coupled with the reality of vandalism, take a terrible toll on school computer programs. Our school department spent thousands of dollars replacing crashed disks before we initiated a system of archival backups.

The disk-replacement programs many publishers offer may be fine for the home user, but schools can't wait four weeks for replacements. For software to be effective, it must be used in its proper place in the curriculum—not four weeks later. Therefore, it's critical that schools buy software they can back up and replace immediately.

I suggest these rules for software management:

- 1) Software should be selected by classroom teachers with regard to specific placement in the curriculum.
- 2) The school should buy one copy of the program to find out if it can be backed up. (We're not experts and still find programs we can't back up.)
- 3) Find alternative software if a program can't be copied.
- 4) Acquire a site license if possible.
- 5) Failing this, buy enough copies for all the computers in the lab.
- 6) Make enough copies for the lab and put the originals in a safe place.

George Poli
8 Jean Drive
Seekonk, MA 02771

inCider welcomes readers' comments regarding articles, letters, or other topics of interest. We reserve the right to edit letters for clarity, style, and space. Please address your correspondence to Letters, inCider, Elm Street, Peterborough, NH 03458.

CORRECTION

In our September 1986 issue, the price of T & W Systems' CAD program was listed incorrectly on p. 70. T & W offers an entry-level version of the package for \$99.95; the production model costs \$1495.

From
Origin
Systems,
the leaders
in fantasy
entertainment...

RING QUEST™

Available on Apple®



An illustrated Adventure in a land of high fantasy. By Dallas Snell, Joe Toler, Ron Goebel, Joel Ellis Rea

The Ring of Chaos has possessed the sorceress Lisa and is using her to disrupt the very fabric of the universe! Having been chosen by the Ring of Order to seek out the ensorcelled enchantress and free her from the grip of the evil artifact, you must face untold perils and horrific beasts in your quest to preserve sanity and Order.

Accompanied by Gorn, Champion of Balema, you must traverse strange lands, encountering some creatures that will help you and others that can only see you as a tooth-

some morsel or a menace. Tests of skill and coordination, as well as brain-twisting

puzzles await the intrepid one valorous enough to take on the Ring Quest™.



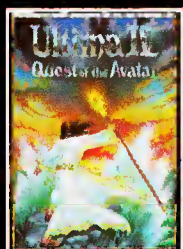
Graphics for the Apple II version.



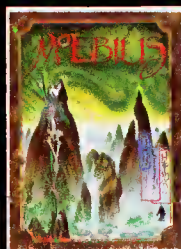
340 HARVEY ROAD, MANCHESTER, NH 03103 (603) 644-3360



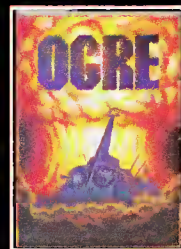
AUTODUEL™ is a futuristic, fast-paced strategy role-playing game where the right of way goes to the biggest guns.



ULTIMA™ IV is the long-awaited sequel to Ultima™ III. The Quest of the Avatar is a quest to the final frontier—the self.



MOEBIUS™ takes you through the elemental planes of a colorful Oriental world of fantasy and adventure in search of the Orb of Celestial Harmony.



OGRE® is a strategy game fought on the nuclear battlefield of tomorrow as an inhuman juggernaut Cyber-tank battles conventional forces.

Ring Quest is a trademark of Origin Systems, Inc./Ultima and Lord British are registered trademarks of Richard Garriott/Moebius is a trademark of Greg Malone/AutoDuel and OGRE are trademarks of Steve Jackson/Apple is a trademark of Apple Computer Inc. Authors wanted. Call us today.

It's not only the most popular educational software in America. It's also the most affordable.

MICROZINE.

The computer learning library with *four* great programs on every disk. Try it *free* and find out why it won the "Best Micro-computer Software of the Year" award.

Explore MICROZINE free in your own home—with no obligation to buy!

Whether your child is just a beginner or a computer wiz, he or she can expand their problem-solving and programming skills while reinforcing math, science and language arts with MICROZINE.

MICROZINE offers your child more built-in motivation and interactive learning power than any other software designed for an Apple computer.

And MICROZINE is also the greatest value in software.

At Scholastic, it wasn't enough to create the most challenging, most exciting, best learning software ever. It had to be the most affordable, too.

So affordable, your child can examine and explore the first four-program MICROZINE disk for 10 days—*free*. And if you decide to keep it, pay only \$14.95. That's four fascinating, full-length educational programs for only \$3.74 each!

So affordable, we'll send you a new MICROZINE disk every other

month—always on a risk-free trial basis—for only \$29.95, or \$7.49 per program. Incredible, when you consider that one Apple software program alone typically costs \$35 or more. And our prices include shipping and handling.

The most powerful learning tools ever developed.

The award-winning MICROZINE series is unquestionably the highest-quality educational software available today. Based on school curriculums for children 9 to 13, each high-interest disk contains *four* original programs—so each is a library full of exciting learning opportunities.

And MICROZINE is backed by Scholastic's 65 years' experience in making learning fun. So it's no wonder more students ask for MICROZINE than any other program in their school software library.

An expanding library for an expanding young mind

Your second MICROZINE issue features *Brain Drain*, an exciting TWISTAPLOT outer-space adven-

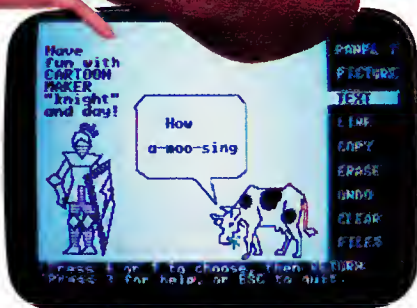
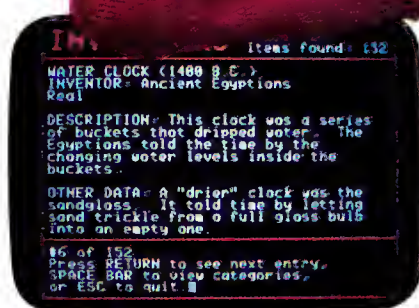


The Funhouse Caper is a totally involving TWISTAPLOT™ adventure in which your child solves three spine-tin-gling mysteries by questioning suspects and sleuthing for clues. The program sharpens reading comprehension and map skills.

ture that enhances reading and decision-making capabilities; *Survey Taker* which teaches children how to conduct surveys on contemporary issues; *City Blocks*, a super-imaginative graphics program in which your child creates his or her own city scene; and *Back Page*, a thoroughly engaging electronic magazine. Each MICROZINE disk comes with a clear, self-instructional User's Manual. Together,

Give your child the educational advantage of a lifetime.





Your child will receive this four-program disk

FREE for 10 days:

Inventors and Inventions brings science and database management vividly to life. Your child will probe a database of real and imaginary inventors and inventions to solve a puzzle—and pick up valuable computer application skills in the process!

Cartoon Maker enables kids to use more than 50 graphics of people, animals, fantasy characters and word balloons to create and print out their own cartoon strips. This irresistible program teaches creative writing, art and design.

Puzzler helps your child create, solve and print out crossword and "cross-number" puzzles, while building vocabulary and improving math and problem-solving skills.

they comprise a powerful educational library that will take your child to the very limits of his or her potential. And with your second purchase, you will receive free a sturdy MICROZINE file-a-disk case to hold your library disks.



Give your child the educational edge

MICROZINE furnishes the tools your child needs to compete and excel in today's fast-paced world. An extraordinary opportunity you owe it to yourself to explore—cost-free, and obligation-free.

Order your introductory MICROZINE disk today. Send in the coupon, or call our toll-free number: 1-800-325-6149. (In Missouri, call 1-800-392-2179.) It's the educational advantage of a lifetime. Now, at the price of a lifetime.



Mail to: MICROZINE from Scholastic Software
Education Plaza
P.O. Box 947
Hicksville, NY 11802

Available for Apple II+,
Ile and Iic computers.

Yes, we're ready to try MICROZINE. Please rush our first four-program disk and enter our introductory subscription to MICROZINE, including a free User's Manual. Bill us at the special Introductory Rate of only \$14.95 (which includes shipping and handling) for all four programs.

We will receive a new four-program

MICROZINE disk on approval about every eight weeks (seven in a year), and be billed \$29.95 for every disk we keep. We may cancel our subscription at any time, and are not obligated to buy even one additional MICROZINE. Moreover, if we are not delighted with the first MICROZINE, we may return it within 10 days and pay nothing.

Name _____

Address _____

City _____ State _____ Zip _____

☐ Payment enclosed ☐ Bill me ☐ Charge my ☐ Visa ☐ MasterCard (61333)

Credit Card # _____ Exp. date _____

Signature _____

If you charge to your credit card we will automatically bill you for each MICROZINE program shipped.

Scholastic Software™
The Most Trusted Name in Learning

11185

NEWS LINE

edited by *inCider* staff **To Russia, with Apples**

When Marilyn Forstchen first saw the global-politics simulation *The Other Side* (Tom Snyder Productions, 123 Mount Auburn Street, Cambridge, MA 02138, 617-876-4433), she thought taking it to the U.S.S.R. would be a great idea: "What better way to play it than with Soviet students?"

Last April, Marilyn Forstchen and her husband, Bill, did just that. They put together a group of 77 students and teachers from nine Maine high schools and junior high schools. They brought

along an Apple //c and set out on a very special field trip—a ten-day tour of the Soviet Union. They spent one day at Moscow School #45 playing *The Other Side*.

All Bill Forstchen's preconceptions about Soviet education dissolved when he arrived at the school. "[The Russian students] were all absolutely fascinated with computers," he says. They were as enthusiastic as American students are about their computers, he adds.

A team of Soviet students and a team of American students played *The Other Side* for a couple of hours. It was "the center-

piece of the trip," Forstchen recalls. "It was wonderful to see their children and our children working around the computer."

The Soviets are making "a genuine effort to orient students to the microcomputer generation," reports Forstchen. In addition, he says, they're producing Apple-compatible computers in the Soviet Union and Bulgaria. Forstchen notes he was able to run *The Other Side* on one of the Russian clones, as well as on the //c the Americans had brought over.

"The computer provided a medium for discussion," Forstchen says, with the computer as the kids' common language. They started talking about computers, then branched off into personal things—and even traded clothing. It was "a wonderful example of how our children can work together," he adds. "The Soviets truly want American kids going over there to meet their children."

When the Americans were finished, they left the Apple //c and a copy of *The Other Side* as gifts for their Russian friends. Forstchen's goal now is to arrange another round of *The Other Side*, via modem, with the students of Moscow School #45 playing against the students from Maine—just as the next session of the U.S.-Soviet summit meetings is taking place. —L.L.

Students' Winning Ideas

Finding homes for unwanted animals, teaching senior citizens how to use computers, writing a voice-

synthesis program, and developing a mythology curriculum were some of the winning ideas students entered in Apple Computer Clubs International's (ACCI) Competition '86.

First-prize winners received Apple computers and an all-expense-paid trip to Washington, D.C., from June 28 through July 1. Apple co-founder Steve Wozniak presented certificates to the winners. Students were also given an opportunity to exhibit their projects, attend computer workshops, and get in a little sightseeing.

The competition was divided into four categories: Community Service, BASIC Programming, Computers in the Curriculum, and Judges' Choice. Prizes based on a project's usefulness, need for team cooperation, and overall excellence were awarded in each category at elementary, middle, and high-school levels.

"We wanted to encourage positive use of personal computers and recognize excellence in the use of personal computers," says ACCI Director John Marvelle. Entries in the Computers in the Curriculum and Community Service divisions were especially creative, Marvelle says, while entries in the BASIC Programming and Judges' Choice categories were diverse and educational.

Jim Martin, a student at William Kelley High School in Silver Bay, Minnesota, says the Washington weekend was interesting: "We got to see the monuments, had a picnic in front of the Jefferson Memorial, and rode paddleboats." Jim won the Secondary BASIC



Courtesy of Taurus Photos/Vance Henry



Courtesy of Taurus Photos/L. Rhodes

Programming award for his voice-synthesis program. He spent six months developing it; according to most people who've heard it, he says, it sounds robotic and has a Finnish accent. Jim, who is now in tenth grade, says he'd like to be a pilot or work for a software company. First, however, he plans to enter next year's competition. His proposed entry? A speech-recognition card, so that he can talk back to his new Apple.

The Worcester County School, in Berlin, Maryland, won the Elementary Community Service Project award for helping to find homes for unwanted animals. The school established a computerized data base and used a word processor to compose letters, newsletters, and posters to reach the community.

Other entries included such projects as a "Presidential Trivia" game, an assembly-language program that teaches differential calculus, a maze game, a student-organized effort to put vocational-rehabilitation issues on the local ballot, and the development of separate curricula on bears, art, and ancient Greece and Rome.

Runners-up in the contest were awarded Apple com-

puters and ACCI merchandise packets. Fifty-one semifinalists were also named; they received copies of AppleWorks and Apple Logo 2, and the merchandise packages.

Wozniak, who talked about the use of Apple computers, and Tom Snyder, president of Tom Snyder Productions, a software-development firm, headed the two main workshops.

Marvelle describes the long weekend as a "smashing success." He adds, "Everyone was treated like royalty, and I received nothing but positive comments."

ACCI supports more than 10,000 clubs for students in kindergarten through high school. The groups receive educational information and project ideas from Apple and are under the direction of a volunteer adviser. For more information about forming an Apple Computer Club or about Competition '87, contact John Marvelle, Director of Apple Computer Clubs International, 175 Middlesex Turnpike, Bedford, MA 01730, (800) 343-1425.

—B.J.

New Developments in Home Control

The home-control and

automation industry is expecting new products and the adoption of industry-wide standards to help "future" the average American home.

Mitsubishi announced in early July that CyberLynx (4828 Sterling Drive, Boulder, CO 80301, 303-444-7733) will assist in its development of an advanced home-automation system, which Mitsubishi says it hopes to unveil at January's National Home Builder's Show in Dallas, Texas. The Cyprus, California-based Mitsubishi is currently marketing home-automation systems in Japan and says it intends to use CyberLynx's technological ability to help design a system that will be better suited for the United States market. Another company is expected to be named to participate in the effort, says Neal Tenhulzen, manager of Home Automation Systems for Mitsubishi.

According to Mitsubishi, the systems will be able to integrate home control, telecommunications, security, entertainment, and energy management. A complete package, with features such as intercoms, video routing, and remote access by telephone, will cost about \$5000 to \$6000, says Tenhulzen. The system will be designed for installation in existing homes, although new homes could benefit if a sufficient number of telephone and video jacks are installed during construction. Tenhulzen anticipates that the system will have an RS-232 port and will be able to interface to most home computers.

CyberLynx will continue to market its current home-control system, SmartHome, which will serve the lower

end of the market, says company official John Antonchick. (See "Let Apple Take Control," p. 92 in this issue, for a discussion of SmartHome and six other systems.)

To better develop the home-automation market, the Electronic Industries Associates (EIA) has formed three committees to recommend standard communication methods for connecting home-control devices. One committee is focusing on infrared technology, used in single-room communication, another on wired buses, which are usually installed in new houses, and the third on power-line buses, used to communicate through a



Courtesy of Taurus Photos/Lenore Weber

home's existing electrical and telephone wiring. Most major U.S. electronics and home-appliance manufacturers and most Japanese electronics firms are involved in the committees, Tenhulzen reports.

According to Jack Frances, General Electric's general manager of product engineering for the home-control products division, the industry is pushing for a standard now because of increasing market pressure. General Electric began the move toward standardization about one and a half years ago when it proposed a standard protocol for use in electrical wiring

THE SEIKO DATAGRAPH 2001 From Computer To Wrist In 7 Seconds!



**2K RAM, 2K ROM,
40 Character
Display, Microprocessor, Power
Supply & Modem ON YOUR WRIST!**

Seiko's new Datagraph 2001 is the ultimate organizational tool — a microprocessor driven timepiece that lets you take computer generated information anywhere you go. With a 2K RAM memory that stores any portion of your schedule or notes. An easy to read LCD, four line display that displays at the touch of a button. And a wrist alarm that sounds when something important is scheduled.

**A COMPLETE HARDWARE/SOFTWARE SYSTEM,
FOR ALL APPLE® // COMPUTERS!**

Time-Trax Software

Powerful, easy-to-use, menu-driven program for scheduling important dates and events. Schedule 23 months on a disk, 99 events/day, get advance notice from 15 min. to 14 days in advance, print out schedules and load data into wrist terminal!

SEIKO Wrist Terminal

A microprocessor driven, full function watch (time, date, alarm & chronograph) and computer terminal with 2K RAM in one package.

ProDOS™ Clock & Interface

A unique wireless interface transfers data into the watch in only 7 seconds! The built in ProDOS clock can be used with ALL ProDOS software for time & date stamping. Displays the time & date on Appleworks™ main menu, too!

BUSY PEOPLE EVERYWHERE need the Seiko Datagraph 2001. Never again will you miss an important appointment, meeting, birthday or dinner date. On the road carry your schedule, directions and phone numbers. Use it to remind you of bills to pay or medications to take.

Put it all together, and you have a system that makes every other electronic scheduler obsolete. It's an extraordinary new kind of computer peripheral.

ONLY \$189.95 COMPLETE ORDER TODAY!
Introductory Offer MasterCard, Visa & COD



Creative Peripherals Unlimited, Inc.
22952 Alcalde #160,
Laguna Hills, CA 92653

800-228-1165 • CA 714-770-3334

Seiko and Apple are registered trademarks of Hattori Corporation of America and Apple Computer Inc. respectively. ProDOS and AppleWorks are trademarks of Apple Computer Inc. Time-Trax is a trademark of Creative Peripherals Unlimited, Inc.

NEWS LINE

and other media used to connect electronic devices.

Although the standards committees have yet to make any official recommendations, Tenhulzen notes that the protocol Mitsubishi will use is supported by several individual companies and that his firm won't wait for the committees' reports: "We're going to take the ball and run with it." —B.J.

Spanning the Globe

You may think of *National Geographic* as a colorful, slightly dry fixture in magazine racks in doctors' offices, but the Washington, D.C.-based National Geographic Society has chartered an expedition into the Apple computing world. Students should be using *National Geographic* software soon, and a three-way partnership among the society, Apple Computer, and the whiz-bang technicians at Lucasfilm promises to accelerate the arrival of learning via videodisc and compact disc.

The *Geographic* has produced educational films and filmstrips and the children's magazine *World* for many years. Now, David Beacom, copy editor for educational media, says, "We've embarked on production of computer software that'll be coming out in the spring of [1987 and will be] more dependable and visual than existing educational software."

By "dependable," Beacom explains, "the content will be better tied to curriculum material and be carefully researched." As for visuals, the Society hopes hi-res graphics will catch teachers' eyes in the crowded school software market: "We're not trying to do in software what can better be done in print, and vice versa." Those graphics, by the way, will (at

least initially) appear on the II Plus, IIe, and IIc; Beacom doesn't rule out the possibility of IIGs programs, but "probably not in this [product] line."

Past that, he adds, "we're really just beginning" on the joint venture with Apple and Lucasfilm, designed to explore the use of optical storage technologies in education. Apple Chairman John Sculley has described the collaboration as "a unique opportunity to learn how combined technologies and media can enhance the educational process."

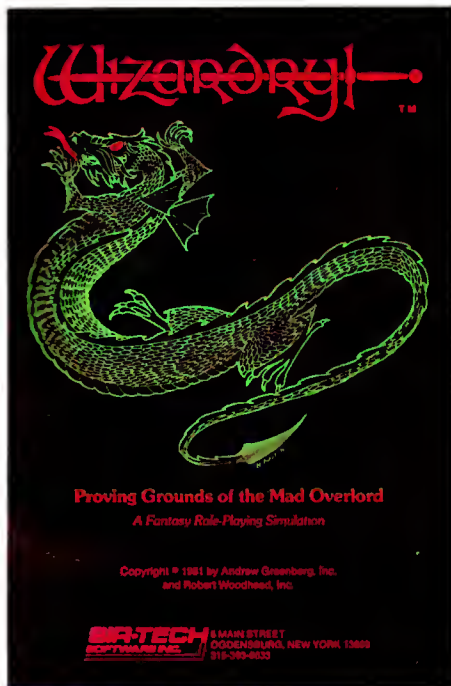
"We're all interested in seeing what each institution can contribute [to the partnership]," Beacom says. "Obviously, each has different strengths—Lucasfilm would theoretically provide the production experience, Apple the computing expertise, and we would provide visual and editorial guidance—but so far the way it's going is that everyone has had something to contribute in every aspect. We've been lucky in that regard."

The Society is in the same boat as other publishers in terms of waiting for computer-video mergers to become practical and affordable for a mass market. "Obviously every computer manufacturer is working on that; they have these meetings and talk in hushed tones [about future products]," Beacom says. "From our standpoint, the sooner the better; since we're an educational publisher, our interest is getting as much as possible that's visually arresting into the classroom." —E.G.

We're always looking for news of the Apple world. If you're making news, send your press releases and photographs to News Line, inCider, Elm Street, Peterborough, N— 03458.

COMMITTED TO EXCELLENCE:

OUR COMMITMENT IS YOUR GUARANTEE OF SOFTWARE THAT CHALLENGES, ENTERTAINS, AND INTRIGUES!



Proving Grounds

Available for Apple // series, Macintosh, IBM PC

Wizardry — that unique series of computer recreation programs designed for those who are seeking the ultimate challenge.

Since its debut, Wizardry is the best-selling role-playing simulation of its kind.

For several very good reasons:

- Because Wizardry is more than just a game;
- Wizardry is a world of variety and depth. A world of richness and pleasure;
- Professionals who work with children and teenagers credit Wizardry with improving reading skills, decision making, visual thinking and logical reasoning. It will develop your ability to set and pursue goals, your willingness to take risks, your capacity to accept loss.

Packed with suspense, full of surprises, Wizardry is enchanting — a compelling diversion that turns your leisure time into prime time.

Wizardry is powerful and sophisticated. A simple command system, 3D maze displays and superb programming provide you with month after month of involvement and satisfaction.

Simply stated, Wizardry is the finest computer role-playing simulation you can buy.

Set your sights on the best. Track down Wizardry at fine computer stores everywhere. Available for the Apple // series micro, Macintosh, IBM PC and some compatibles. Also available in French and Japanese.

Write to us and we'll tell you more.

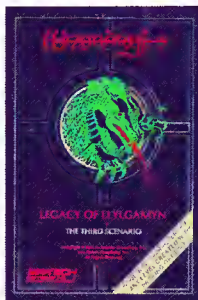
LOOK FOR THE DRAGON • SYMBOL OF WIZARDRY • PROMISE OF EXCELLENCE

Additional Wizardry Scenarios

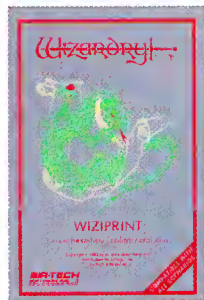


Knight of Diamonds

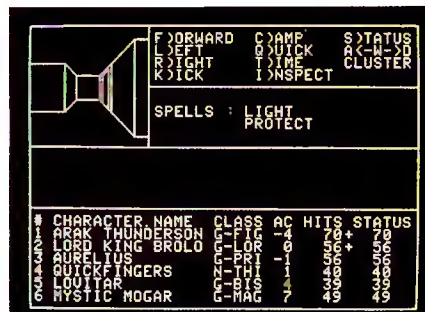
Available for Apple // series



Legacy of Llylgamyn



Wiziprint



SIR-TECH

SIR-TECH SOFTWARE INC.
P.O. BOX 245
OGDENSBURG, NY 13669
(315) 393-6633

by Paul Statt, *inCider* staff

Apple Clinic is a forum for discussing Apple II hardware, software, and related subjects. If you have questions or answers, or want to make a statement, write to Apple Clinic, inCider, Elm Street, Peterborough, NH 03458.

ProDOS and AppleWorks

I have a group of Bank Street Writer files I'd like to convert to AppleWorks files. I've been able to change them from DOS 3.3 to ProDOS, but the AppleWorks system won't accept them. Is it because DOS 3.3 files are binary and ProDOS' are system files? What's the solution?

Jim Wright
Murietta, CA

AppleWorks has its own unique operating system—it's not exactly ProDOS, but it's close. If you convert DOS 3.3 to ProDOS, you're halfway to your goal. You simply have to use the ProDOS files as data, and "Add Files to the Desktop" from the AppleWorks Main Menu. Go with the "Make a New File for the Word Processor" and "From a Text (ASCII) File" option. You'll need to know the file's complete ProDOS pathname. Put the file on your desktop and save it to disk—it's now in AppleWorks format.

Noise Pollution

I recently purchased an Apple IIe system and seem to be having trouble with my DuoDisk. Whenever it starts formatting a disk it makes a loud noise—much like my truck when I try to shift gears without using the clutch. It does so only in the formatting stage and doesn't return any error messages; the disks are indeed formatted afterward. Should I get this repaired while the system is under warranty, or is this noise characteristic of the DuoDisk?

Dennis Davidson
Hearne, TX

I like the Apple UniDisk 3.5 because it holds 800K and it's quiet. DuoDisks make a lot of noise when formatting—for that matter, they

scream when simply saving data or converting DOS to ProDOS. I don't know the source of the racket—maybe Apple made formatting raucous to remind us that it's a brutal process that destroys everything in its path.

Color Questions and Memory

I'm an electronics engineer, but I'm still confused: What will an RGB monitor do for my Apple? Will I simply see the same colors more sharply, with less color smearing, or is there more to it? With a composite video monitor, lines in my graphs change colors or break into rainbows at the corners. Will RGB help?

R. Schneider
Sierra Vista, CA

Why is it that Apple hues aren't all that hot compared to, say, the IBM PC's or Commodore Amiga's? Is it my Apple Color Monitor 100/Applied Engineering RGB Card combination? I find in particular that Apple red seems to come out more a washed-out brown than the true bright red seen on other systems.

D.P. March
Honolulu, HI

Wise readers, you have clear heads and clear vision, too. Apple RGB colors are bad, and red is the worst. The difference between RGB and composite color is that the former is sent by three separate signals to your monitor, while the latter is a single stream of information about all colors. Apple II's send only that single composite stream—that's why you need an RGB card to separate red, green, and blue if you want to use an RGB monitor. The color loses a lot in translation—that explains the weak red.

You can see differences in color quality, though, when you use different RGB cards—you'd need an understanding, patient Apple dealer to let you do that kind of shopping around.

But there's hope for Apple RGB. The new Apple IIgs has built-in RGB output—analogue RGB, which offers true colors and a greater range of hues.

Wrong Reference

I'm currently writing a program for a school that uses 80-column firmware on its Apple IIe's. I recently purchased the *Apple IIe Reference Manual*, which includes the system-Monitor and 80-column-firmware listings. I had no trouble finding the locations of the subroutines I needed in the manual listings, but when I disassembled the 80-column firmware (\$C000-\$CFFF) on my machine, I discovered that it was totally different from those listings.

I know that the enhanced IIe contains new video ROM's: Does this include the 80-column firmware? The dealer from whom I bought the manual told me this was the only Apple publication with the ROM listings and had no idea how I could get updated ones.

J.R. Bork
Mechanicsburg, PA

Does your dealer still have an Apple I for sale? He needs updating as badly as your manual. Apple's 80-column firmware is one major difference between the old and new Monitors. You can find the enhanced video firmware listed in the Apple IIc Reference Manual: Volume 2 (Apple part #A2L4030) or the Apple IIc Technical Reference Manual (#030-1238-A). The latter is published by Addison-Wesley Publishing Company, 6 Jacob Way, Reading, MA 01867, (617) 944-3700. It's available in bookstores or can be ordered from the publisher if not in stock.

Music in His Soul

I want to generate electronic music signals with my Apple II Plus. Is there some address to which I could write bytes that would directly affect the voltage on a pair of contacts? Also, is there a company that makes peripheral cards that will let my computer send and receive MIDI (Musical Instrument Digital Interface) signals?

Jim Worden
Naples, FL

*Four 1-bit outputs called annunciators affect the 16-pin game-I/O connector on an Apple II (see the **Table**).*

SAVE THE SLOTS

It's hard to believe, but even in 1986 there are multifunction cards brazenly stealing slots from Apple IIs™. *Shamelessly. Senselessly.* And yet, it's happening quietly in offices and bedroom studies across the country.

With promises of functions and features, these cards gloss over the fact that they're robbing expansion slots that should be conserved for the use of others. It's a selfish practice. And it must be stopped.

SLOTBUSTER II™ LEADS THE FIGHT

It's time to save the slots. And you can help.

Just join the hundreds of other concerned users who, like you, want to enjoy the rewards of a multifunction card without wasting slots. They found SLOTBUSTER II. So can you.

In just one expansion slot you can benefit from buffered parallel, serial, and BSR ports, buffered speech synthesis and telecommunications.

Without sacrificing phantom slots to non-existent hardware. And without using any of your Apple's valuable memory.

THE BENEFITS OF JOINING US

Ours is a noble cause, guided only by the purest motives. But we need *your* help. Here's what you can get for joining us*:

- Serial printer port (Super Serial Card™ compatible)
- Parallel printer port (Apple Parallel Card compatible)
- Built-in hi/double hi-res graphics printing commands
- Modem port (Super Serial Card compatible)
- BSR port for remote control of home lights and appliances
- On-board speech synthesizer (speaks in virtually any language)
- SpeechWorks™ speech software for AppleWorks
- Four on-board buffers for high-speed processing of serial printer, parallel printer, BSR and speech data
- Utility software
- Direct telephone technical support

And, you get the satisfaction of knowing you've preserved a valuable resource for future generations of products. All features are compatible with most existing software. Select the features you need now—add others at any time. Prices start at \$170 for a card with one printer port and buffer.

ACT NOW, BEFORE ANOTHER SLOT IS LOST!

Time is running out. Last year alone, hundreds, maybe thousands of slots were lost to unsuspecting buyers of multifunction cards. Don't be another statistic! SLOTBUSTER II is the only multifunction card endorsed by RC Systems, the concerned folks behind this campaign.

Help save the slots! *You* can make the difference.

To find out how you can help, call us at **(206) 672-6909** or fill out and mail the coupon below.

SLOTBUSTER II THE MULTIFUNCTION CARD THAT SAVES THE SLOTS!



Free Button

YES, I want to help!

Please send me information on how I can help save the slots with SLOTBUSTER II. I'd also like my free "Save the Slots" button.

Name

Company

Street

City State Zip

Mail to:

Friends of SLOTBUSTER II

RC SYSTEMS, INC.
121 W Winesap Rd
Bothell WA 98012

Sponsored by
RC SYSTEMS
INCORPORATED

SLOTBUSTER and SPEECHWORKS are trademarks of RC SYSTEMS, INC.
Apple, Apple II and Super Serial Card are trademarks of Apple Computer, Inc.

* Purchase of SLOTBUSTER II required.

YOUR
APPLE
TODAY,
KEEPS THE
DOCTOR
AWAY.



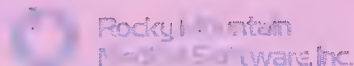
HOUSECALL

THE COMPUTERIZED
HOME MEDICAL ADVISOR

- Written By Physicians.
- Over 400 Diagnoses.
- Concise Information accessed directly or through branching questionnaire.
- Educational—background and treatment for each condition diagnosed.
- Closely Related Diagnoses follow computer's initial choice.
- A Ready "Second Opinion".
- Fast, Easy and Fun to use.
- Self Contained—Multiple disk data base—no modem needed.
- Always Current—yearly updates available at nominal cost.

Great For Business Offices As An Employee Benefit. Also Helps Reduce Absenteeism

HOUSECALL Will Run On APPLE II +, c, e, IBM PC Family, and 100% Compatibles. Dealer inquiries invited.



To Order Call Toll Free
(800) 233-3556
For More Information Call
(303) 773-1237

List Price \$79.95 **SPECIAL \$49.95**

Please send _____ copies of **HOUSECALL**
@ \$49.95 + \$5.00 shipping (\$12.00 foreign).
(Colorado residents add \$1.80 tax). 20 Day Money
Back Guarantee. For Unprotected Add \$20.00.

Type of Computer _____

Name _____

Address _____

City/State/Zip _____

☐ Check ☐ VISA ☐ MC Exp. Date _____

No. _____

Signature _____

**Rocky Mountain
Medical Software, Inc.**
5680 S. Syracuse Circle, Suite 500 I
Greenwood Village, CO 80111

APPLE CLINIC

Table. Annunciator memory locations (reproduced with permission of Apple Computer from the Apple IIe Technical Reference Manual, Addison-Wesley, Reading, MA, 1985, p. 40).

Number	Annunciator		Address		Hex
	Pin	State	Decimal		
0	15	off	49240	- 16296	\$C058
		on	49241	- 16295	\$C059
1	14	off	49242	- 16294	\$C05A
		on	49243	- 16293	\$C05B
2	13	off	49244	- 16292	\$C05C
		on	49245	- 16291	\$C05D
3	12	off	49246	- 16290	\$C05E
		on	49247	- 16289	\$C05F

Pin numbers listed are for the 16-pin IC connector on the circuit board.

Each annunciator is controlled by a soft switch. If the soft switch is off, the voltage at the corresponding pin on the game connector is very nearly zero; turn the switch on and it jumps to almost 5 volts. I'm no musician, but I figure that would give you a range of only four notes—great if you're composing for the Ramones, but your tastes may be more demanding.

Roland Corporation (7200 Dominion Circle, Los Angeles, CA 90040-3647, 213-685-5141) sells MIDI boards for Apples; it also publishes an electronic-music magazine that may help. Musician: Player and Listener (Amordian Press, P.O. Box 701, 31 Commercial Street, Gloucester, MA 01930), a slick rag for serious amateurs, has more monthly MIDI madness. (Also be sure to check out inCider's review of the Roland MIDI Users Sequencer/Editor interface and software in this issue, p. 42.)

The second thing beginning ProDOS programmers should do—after subscribing to inCider—is to call or write Beagle Bros (3990 Old Town Avenue, Suite 102C, San Diego, CA 92110, 619-296-6400), get the latest catalog, and buy everything you can afford. The third step is to call the former Beagle Brothers at The Software Touch (9842 Hilbert Street, Suite 192, San Diego, CA 92131, 619-549-3091).

For automatic 80-column catalogs, try Big U, the ProDOS Utility Disk by Randy Brandt of Beagle Bros (\$34.95). Its nifty Key-Cat 80 routine turns Control-Reset into an instant 80-column command. For BASIC renumbering and a whole lot more, get ahold of Program Writer (see Editors' Choice, June 1986, p. 120), \$49.95 from The Software Touch.

It Couldn't Be Done

I hear that Apple Computer is coming out with a 16-bit Apple II with a megabyte of RAM. If I get a RamWorks II with 1 megabyte and a 16-bit card, can I make my IIe compatible with the IIgs? Would I need RamFactor with 1 megabyte and 16 bits? What about other cards? Should I replace a few chips in the old IIe? Or is there no way to use software written for the IIgs on my IIe?

Andrew Quan
Hacienda Heights, CA

You can—you can buy Apple's IIgs retrofit kit for your IIe. At press time, Apple wouldn't tell me how much it costs, but it'll be cheaper than buying a new IIgs. Adding a 65816 microprocessor and extra RAM won't do—the 65816 and 6502 aren't "pin-compatible," which briefly means that you can't plug one microprocessor into

Get Smart

Is there any way to make a "smart" ProDOS catalog—that is, one that lets you type catalog in 40 columns, but switches automatically to 80 columns and prints a full catalog? I know PEEKs and POKEs can accomplish this, but do you know of a permanent addition?

Jeff Crown
Wichita, KS

When I type in a program, I usually prefer to add or change some features. This practice is complicated when I use ProDOS, because I can't find a method or ProDOS routine for renumbering. Can it be done?

SSG Rick Laws
Fort Ord, CA

the other's socket. The IIGS Monitor is new, and most IIGS software makes great use of the machine's special firmware routines.

But nothing is impossible—the folks at Apple who created the IIGS built a tabletop version of the new machine from old Apple II parts, new chips, and the trash from Steve Wozniak's garage. You can build one, too, if you can find the chips. Keep in touch.

BBS Update

A number of readers have told us they don't know how to log on to inCider's 24-hour, cost-free bulletin-board system (603-924-9801). It's easy.

Dial the number. Wait for your modem and communications software to connect; the board works at 300 or 1200 baud. If you don't see a welcome message right away, hit the return key a couple of times or try Control-C (this is one time when banging on the keyboard may help). You can write in 40 or 80 columns, capitals or lowercase. The Apple delete key also works.

A few questions follow. The first is "What's your name?" Start with your first name; don't bother with an alias (we'll change it). When the BBS asks, "Where are you calling from?" try to get as much of your city and state as you can into 20 characters. Your phone number has to be in the form 111-111-1111.

Next, read this information and okay it—you get several chances. If you want your own password, type P when prompted.

Your first BBS message will be directed to me, the sysop, or system operator. Include your name, age, and phone number (your sex as well, if your name isn't clearly male or female), and a description of your computer and your background. One reason for writing this first message is to convince me to give you a high access level, so think about what you write. Your access level gives you the power to up- and download programs and send and receive messages.

To end your message, write done on a separate line (no quotation

marks). Next up is the edit menu. If the message is fine, type O for "okay," and the message is sent. If you need to edit it, type a question mark.

Let me emphasize these two general rules: If you need help, type a question mark, and if you've finished writing, type done. It's simple. We hope to hear from you soon.

AppleWorks Wide

I'm using AppleWorks on an Apple IIc. I have a data base of about 1300 names, addresses, and so on, and want to print labels in side-by-side columns, two or three wide. Can this be done?

Richard Nemeth
Greenwich, CT

Beagle Bros can do it. MacroWorks (see Editors' Choice, August 1986, p. 112) offers more than macros: It features a Multi-Columnizer that prints AppleWorks word-processing files in two or three columns. When you create a report, print in label format to

If you feel like a lost soul when it comes to music software, get the bible.

Almost every bit of music software you could possibly want or need can now be found in a unique single source: Coda, the bible of music software.

Detailing over 500 items which range from software to accessories to books, Coda is a remarkably user-friendly catalog that takes the confusion out of searching for the right music software. It's the computer-using musician's best



resource today. In fact, if you can't find what you need in Coda, chances are it doesn't exist.

Order Coda today for only \$4.00 by simply calling the number below. Or write to: Wenger Corp., 555 Park Drive, Dept. II, Owatonna, MN 55060. It's not only inspirational, it's divine guidance.

Coda. 1-800-533-0393.

All major credit cards accepted. In Minnesota call 1-800-533-6774. Elsewhere call collect 1-507-451-3010.



SEE THE LIGHT.

The first lightweight, totally portable, lap top computer featuring the Apple IIc[®], C-Vue[™] flat panel LCD display and Prairie Power Pack[™] carrying case.

C-Vue Display Is a Sight For Sore Eyes.

C-Vue's full 80 column by 24 line resolution features Seiko[®] LCD technology. A knob adjusts contrast and you can tilt the screen to the most comfortable viewing angle. (The C-Vue display is also compatible with the Laser[™] 128.)

The C-Vue display operates on the Prairie Power Pack. Both computer and display unit fit easily into the durable Cordura carrying case.

Who Says "You Can't Take It With You?"

The applications are almost endless, from traveling salesman and real estate salespeople to anyone who spends time outside the office and deals with data.

The 20 lb. lap top combination is easy on the back. You'll find it surprisingly competitively priced and we welcome dealer inquiries. For further information or to place your order call 1-800-334-0275. In Atlanta, call (404) 449-8025. Or write to:



Precision International, Inc.
3028 Adriatic Court
Norcross, Georgia 30071

Also manufacture related LCD products.

APPLE CLINIC

the clipboard, then hurry into a new word-processing document. Copy the data from the clipboard into your word-processor file and use Macro-Works' Multi-Columnizer to print two or three columns.

If that seems like too much work, why not write a macro with Macro-Works that does it all in one key-stroke?

Also see "Action with AppleWorks" in this issue's Letters column, p. 10, for an alternate method submitted by one of our readers.

Disk, Disk

I've been having trouble with my copy-protected disks—either they won't load or they self-destruct. I'm told the problem is my DuoDisk drive but I've had my DuoDisk serviced three times and the problem still exists.

Joseph Porri
Trenton, NJ

I've recently experienced problems with my copy-protected software and DuoDisk. The manufacturer wrote me that Apple had discovered faulty components in the DuoDisk. Can you explain the problem, how to detect it, and what one might be able to do at home to correct it?

Terry L. Fletcher
Grants, NM

Jeff Belding, Apple's disk-drive-product manager, tells us that all DuoDisks shipped after October 29, 1984, have been fixed, but that it's possible you have older ones. If so, you can replace them free of charge.

The problem is the timing of the file formatter. In older Apple disk drives, the tolerances aren't as tight as they are in the new DuoDisk, which requires that everything be timed perfectly. Older DOS 3.3 copy-protected software and even some early ProDOS programs don't keep time well enough to meet the DuoDisk's exacting standards.

If you bought your DuoDisk in 1984 and it's eating copy-protected disks, you probably have a faulty DuoDisk. If you can't remember when you bought your DuoDisk, or you bought it secondhand, you may have a defective DuoDisk. Does it run newer ProDOS software easily, but choke on older DOS 3.3? Either way, you can't do a thing about it—take the offending DuoDisk to an authorized Apple dealer and demand your rights. ■

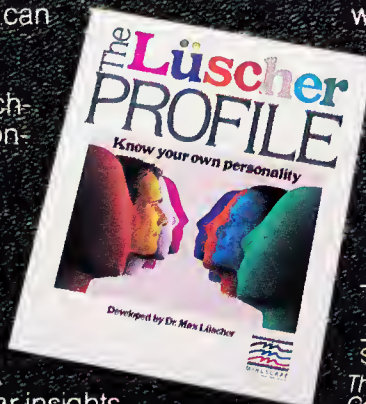
Who you really are is worth looking into.



The way you react to colors can reveal your personality.

Pioneering psychologist Dr. Max Luscher developed a technique for color preference personality testing in 1947. Now Mindscape offers an updated version of his test in software form with *The Luscher Profile*.

By recording and interpreting your responses to specific colors, shapes, and shades you'll better understand yourself. Family and friends will gain similar insights



when they take the test. In fact, *The Luscher Profile* is so accurate, so simple and so much fun you'll use it again and again.

So put your personality to the test. Visit your software dealer soon for *The Luscher Profile*.

And start seeing yourself in a whole new light.

Mindscape

Software that challenges the mind



The Luscher Profile available for Apple®
Commodore™ 64/128, IBM® PC, and Macintosh.™

Mindscape, Inc. 3444 Dundee Road, Northbrook, Illinois 60062, 1-800-221-9884. (In Illinois 1-800-942-7315)

Apple, Macintosh, IBM, and Commodore are registered trademarks of Apple Computer, Inc., International Business Machines, and Commodore Electronics, Ltd. respectively. Mindscape is a trademark of Mindscape, Inc. Test copyright © 1984 by ColorTest-Verlag AG, Switzerland.

Where to find and buy The American Challenge: A Sailing Simulation and The Lüscher Profile.

National

B. Galt Software Etc.
Available at selected stores
Child World
Available at all stores
Children's Palace
Available at all stores
Federated Group
Available at selected stores

Alabama

Electronics Boutique
Hoover
(205) 985-0388
Software City
Huntsville
(205) 536-9456

Arizona

Computer West
Phoenix
(602) 849-4795

Arkansas

The Micro Shop, Inc.
Little Rock
(501) 568-8023

California

Computer Center of Hayward
Hayward
(415) 538-7368
Computer-Ease
West Los Angeles
(213) 559-1763
Egghead Software
Mountain View
(415) 964-8800
Tarzana
(818) 881-7870
Sunnyvale
(408) 735-9722
Sherman Oaks
(818) 783-6214
Santa Monica
(213) 829-7955
Cupertino
(408) 257-0892
Santa Ana
(714) 556-6960
San Francisco
(415) 956-4488
San Diego
(619) 277-4020
Campbell
(408) 371-8212
Rowland Heights
(818) 913-8555
Pleasant Hill
(415) 671-2702
Pasadena
(818) 793-2084
Orange
(714) 639-7966
Montclair
(714) 624-3531
Menlo Park
(415) 322-2871
San Jose
(408) 281-4977
Lawndale
(213) 214-1416
Los Angeles
(213) 477-1577
La Mesa
(619) 462-5747
Brea
(714) 990-9373
Huntington Beach
(714) 848-8093
Home Computing Center
Concord
Home Computing Centers
Mill Valley
(415) 388-1407
San Leandro
(415) 352-5030
San Bruno
(415) 588-1201
Shoreline Software
Sacramento
(916) 481-2412
Software Central
Pasadena
(818) 793-4101

Software Centre International

Santa Ana
(714) 641-0332
Software City
San Diego
(619) 560-6886
Software Plus
Citrus Heights
(916) 726-8793

Sysware

San Diego
(619) 278-8660
The Software Place
Fairfield
(707) 427-2104

Colorado

Contemporary Comp.
Denver
(303) 692-0937
CW Electronics
Denver
(303) 832-1111
DMA Computer Solutions
Colorado Springs
(303) 475-2488
Renaissance Computerware
Colorado Springs
(303) 634-3051
Software Center
Englewood
(303) 799-8833
Connecticut
Computer Resources
Wethersfield
(203) 563-9000
Electronics Boutique
Danbury
Softown
Danbury
(203) 797-8080
District of Columbia
Program Store
Washington
(202) 863-1947

Florida

Electronics Boutique
Boynton Beach
(305) 736-2308
Miami
(305) 251-5517
Games 'N' Gadgets
Jacksonville
(904) 725-7026
Clearwater
(813) 797-0585
Orange Park
(904) 264-1550
Tallahassee
(904) 877-3813

Georgia

Academic Software
Roswell
(404) 998-7766
Electronics Boutique
Atlanta
(404) 433-0197
Atlanta
(404) 261-8305
Games 'N' Gadgets
Atlanta
(404) 399-5023
Atlanta
(404) 934-7794

Illinois

Aardvark Computer Software
Chicago Heights
(312) 481-5888
8abbages, Inc.
Northbrook
(312) 564-4830
Aurora
(312) 898-6070
Chicago
(312) 263-7613
Basic Software Shop
Midlothian
(312) 385-8435
Chicago Computer Centre
Chicago
(312) 372-7360

Computer Outpost

Schaumburg
(312) 980-0411
Computer Showroom
Barrington
(312) 382-5108

Computerworld

Chicago
(312) 282-1575
Disk N Tech Software
Orland Park
(312) 460-1060

Family Software
Bloomington
(312) 351-3730
Oakbrook Computer Center
Oakbrook
(312) 941-9005

Protecto Enterprises
Barrington
(312) 382-5244
Software First
Evanston
(312) 475-7337

Software Tree
Winnetka
(312) 446-1660
Universal Computing
Highland Park
(312) 433-8934

Video Etc.
Oerfeld
(312) 498-9688

Indiana

Butrex
Ft. Wayne
(219) 485-7511
Computer Corner
Marion
(317) 662-7160

Computer Works
Carmel
(317) 848-0123
Louisiana
Electronics Boutique
Monroe
(312) 322-5813

Kenner
(504) 464-4130
Inacom Computer Center
Lafayette
(318) 981-8122

The Computer Shoppe
Metairie
(504) 454-6800
Maryland
Clinton Computer
Clinton
(301) 856-2500

Laurel
(301) 953-1110
Electronics Boutique
Baltimore
(301) 298-9674

Owings Mills
(301) 363-6521
Baltimore
(301) 687-2909
Games 'N' Gadgets
Baltimore
(301) 256-7453

Baltimore
(301) 284-2873
Greetings and Readings
Towson
(301) 825-4225

Program Store
Kensington
(301) 984-1233
Massachusetts
Computer Magic
Sandwich
(617) 888-7313

Electronics Boutique
Holyoke
(413) 533-1786
Personal Computer Resource
Norwell
(617) 871-5396

Micro Dynamics
Shrewsbury
(201) 747-6745
Simplex
Springfield
(201) 379-4729

New York
Byte Shop
Merrick
(516) 379-0000

Softpro
Burlington
(619) 273-2919
The Whiz Stores Inc.
Westborough
(617) 366-2030

Michigan

American Television
Marquette
(906) 228-7100
Computer Solutions
Mason
(517) 628-2943

Computers Today
Holland
(616) 399-8310
Soft-House Computer Center
Garden City
(313) 422-6760

Software Library of Keego
Keego Harbor
(313) 681-6600
Software Trends
Clawson
(313) 288-3280

The Software Shop
Troy
(313) 524-1581
Mississippi
Electronics Boutique
Ridgeland
(601) 957-3732

Missouri
Games 'N' Gadgets
Columbia
(301) 730-7402
Software City
Creve Coeur
(314) 434-3311

Software To Go
Clayton
(314) 727-3420
Crestwood
(314) 968-8700
The St. Louis Software Center
Maryland Heights
(314) 739-8989

Nebraska
Nebraska Bookstore
Lincoln
(402) 476-0111
Nevada
Computer World
Las Vegas
(702) 796-1379

New Hampshire
Electronics Boutique
Nashua
(603) 891-2222
New Jersey
Electronics Boutique
Cherry Hill
(201) 366-1636

Woodbridge
(201) 636-1451
Wayne
(201) 785-8710
Voorhees
(609) 772-6355

Family Computer Center
Fairfield
(201) 882-8370
S. Orange
(201) 762-6661
Games 'N' Gadgets
Livingston
(201) 992-6753

Burlington
(609) 387-3583
Micro Dynamics
Shrewsbury
(201) 747-6745

Simplex
Springfield
(201) 379-4729
New York
Byte Shop
Merrick
(516) 379-0000

Computer Software Plus
Brooklyn
(718) 645-1880
Electronics Boutique
Valley Stream
(516) 271-8385

Games 'N' Gadgets
Lancaster
(717) 299-9504
West Mifflin
(412) 655-6804
King of Prussia
(215) 337-1298

Media
(215) 566-3948
Lycos Computers
Williamsport
(717) 494-1144
Professional Computer Center
at Hess's
Allentown
(215) 435-2911

Software City
Pittsburgh
(412) 854-1777
Tussey Computer
State College
(814) 234-8772
White House Computer
Williamsport
(717) 322-7700

Rhode Island
Software Connections
Warwick
(401) 738-3430
Tennessee
Games 'N' Gadgets
Memphis
(901) 362-8399

Texas
8. Galt Software Etc.
Houston
(713) 439-1045
Babbages, Inc.
Houston
(216) 955-3500

Houston
(713) 875-0181
Houston
(713) 556-8492
Houston
(713) 995-5758
Houston
(713) 465-7713
Dallas
(214) 484-8326
Dallas
(214) 368-0764
Plano
(214) 578-7649
Mesquite
(214) 270-8865
Dallas
(214) 788-1707
Hurst
(817) 589-0603
Fort Worth
(817) 294-1279
Irving
(214) 255-2129
Houston
(713) 469-5459
Webster
(713) 338-1619
Computer Galleries
Houston
(713) 661-0055
Computer Solutions
San Antonio
(512) 341-8851
Home Software
Friendswood
(713) 480-5426
Macproducts
Austin
(512) 473-2604
Software Centre
Houston
(713) 558-9750
Software and Things
Austin
(512) 451-4347
Software Centre
Houston
(713) 783-9857

Software City
Austin
(512) 451-2489
Software Galeria
San Antonio
(512) 377-3003
Software Station
Houston
(713) 782-7537
Houston
(713) 874-9696
The Computer Store
Lake Jackson
(409) 297-5515
The Software Place
Houston
(713) 781-1488
Utah
Bits N Bytes
St. George
(801) 628-5755
Virginia
Clinton Computer
Alexandria
(703) 838-9700
Diskcovery
Falls Church
(703) 536-5040
Family Computer Center
Fairfax
(703) 385-2758
Springfield
(703) 866-9122
Games 'N' Gadgets
Hampton
(804) 827-0877
Virginia Beach
(804) 497-7311
Livingston Beach
(804) 340-7422
Software City
Richmond
(804) 320-2244
Virginia Beach
(804) 463-8220
Washington
Egghead Software
Bellevue
(206) 644-4545
Tukwila
(206) 575-0445
Software Express
Battle Ground
(206) 687-5939
West Virginia
Computer Terminal
Berkeley Springs
(304) 258-5600
Wisconsin
American Television
Madison
(608) 271-1000
Appleton
(414) 731-3800
Waukesha
(414) 549-3440
Computer Software Center
Milwaukee
(414) 543-5123
Computer Warehouse
Milwaukee
(414) 321-3120
Milwaukee
(414) 354-3120
Ricom
Glendale
(414) 351-2207
Team Electronics
Wausau
(715) 842-3364

If there isn't a dealer listed in your area, don't give up.
Give us a call. Phone 1-800-443-7982. In Illinois 1-800-654-3767.

Note: Not all formats available at all locations.



Sharpen Your Sailing Skills Without Getting Your Feet Wet.



Head for the Silicon Bay and be the captain of your own keyboard.

In Mindscape's *The American Challenge: A Sailing Simulation*™, you'll learn to pilot an Apple® IIe or IIc, IBM PC®, or Commodore® 64/128 through eight challenging courses.

This wind-blown sailing simulation will challenge and thrill beginners and old salts alike. Race against the stiff competition supplied in the program. Challenge another skipper head-to-head. Or race an opponent via modem from coast-to-coast.

Complete the preliminaries and you'll face the Aussies in the closest thing to a

real race for The Cup this side of Perth.

You may even win an expense-paid trip to Perth, Australia and course-side seats to watch the Yanks reclaim the America's Cup next January. Runners-up will receive Hayes™ Modems. Contest details are inside every package or available from your retailer.

Hoist a sail on your monitor. And sit down at the keys. *The American Challenge: A Sailing Simulation*™ will make you a better sailor with a few short strokes.

Mindscape
Software that challenges the mind.



Visit your retailer or call 1-800-443-7982 (in Illinois, 1-800-654-3767) for VISA or MasterCard orders. To purchase by mail, send VISA or MasterCard number with expiration date, check or money order to Mindscape, P.O. Box 1167, Northbrook, IL 60065. Add \$3.00 for shipping and handling. Allow 3-5 weeks for delivery. The American Challenge is \$39.95 for Apple and IBM versions; \$29.95 for C64/128.

Copyright © 1986 Mindscape, Inc. Mindscape is a trademark of Mindscape, Inc. Apple, IBM, and Commodore are registered trademarks of Apple Computer, Inc., International Business Machines, and Commodore Electronics Limited respectively. Hayes is a trademark of Hayes Microcomputer Products, Inc.

The American Challenge
A Sailing Simulation



REVIEWS

MultiScribe; ProModem 1200A and AppleMate; Tobacco and Fitness; Fleet System 3; AutoWorks; MIDI Users Sequencer/Editor; The Handlers; B-Sider

Write Like MacWrite

MULTISCRIBE

Styleware, 6405 Hillcroft, Suite 201, Houston, TX 77081

Word processor; 128K Apple IIe or IIc, ProDOS
\$59.95

Ease of learning	■ ■ ■ ■
Ease of use	■ ■ ■ ■
Documentation	■ ■ ■
Support	■ ■ ■ ■
Overall	■ ■ ■ ■

You don't need mousetext to have a good mouse-driven word processor. Styleware's innovative MultiScribe blends full-featured editing power with a Macintosh-like interface and the creative freedom of double hi-res graphics, bringing the fun of MacWrite to enhanced and unenhanced Apples alike. You may be content with your old word processor, but you can do things with MultiScribe you simply can't consider with any other program.

Its pixel-mapped graphics (as opposed to the mousetext characters competing products use) make MultiScribe as versatile on screen as it is in dot-matrix printouts. Pull-down menus provide a host of type fonts, styles, and sizes—from bold to shadow, Chaucer to Shakespeare—at the click of your mouse or the press of a key. Ten fonts come with MultiScribe; a supplied FontEditor program lets you stretch your creativity by designing your own.

MultiScribe isn't perfect; some functions are on the slow side, and the early production version (1.02) I tested had its share of omitted features and system hiccups. Styleware, however, promises needed improvements for version 1.1 (shipping at press time) and dazzling extras for this fall's version 2.0, while keeping MultiScribe a price/performance leader at \$59.95. (The program is not copy-protected, and upgrades sell for \$10 plus shipping.)

Conventional Weapons

While it's visually a MacWrite clone, with commands arrayed in pull-down menus from a menu bar at the top of the screen, MultiScribe has ample

functionality for traditional word processing. Cut, copy, and paste commands handle normal editing; a disk-based clipboard lets you copy and move text between documents easily.

Inset rulers allow complete flexibility in setting margins, tabs, spacing, and justification. (In an exception to MultiScribe's "what you see is what you get" policy, right, full, and center justification don't appear on screen. Styleware claims this is because of the slow graphics speeds of the IIe and IIc.)

MultiScribe currently cannot generate a table of contents or index, nor can it handle footnoting. Also missing is the ability to print headers and footers, or to undelete words or sentences when the clipboard isn't used (as with AppleWorks, which can restore text moved to the clipboard, but not text erased by the delete command).

Editing is RAM-based with 30K (approximately 9–12 pages) reserved for your document. Longer documents can be created by chaining separate files with a Print Merge command.

MultiScribe's impressive printed output supports a wide variety of dot-ma-

trix printers (such as Epson, Okidata, and C. Itoh as well as the ImageWriter) and interface cards. When you select Print from the File menu, a dialog box opens to let you specify high, standard, draft, or text quality. Although they require the longest time to print, the high and standard modes produce crisp, dark characters. The dialog box also handles page numbering, the number of copies desired, and the range of pages to print. A print job in progress can be cancelled at any time.

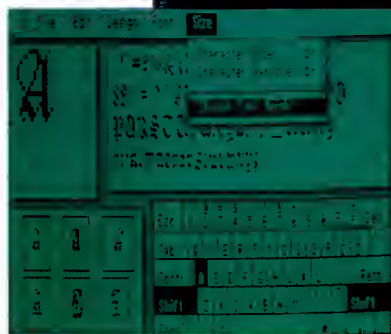
If you're moving up from another word processor, MultiScribe can read and write ASCII text files. This feature lets you customize your existing documents with new fonts and styles, or transfer MultiScribe files to AppleWorks or your favorite spelling checker.

A Mouse of a Different Color

A common criticism of mouse software is that the mouse gets in the way by taking your fingers from the

inCider's Ratings

Excellent	■ ■ ■ ■
Above average	■ ■ ■
Good enough	■ ■
Not up to standards	■
The empty set	□



To boldly go at speeds no man has gone before.



*With the TransWarp™ accelerator, your IIe™ or II+™
is 40% faster than the IIGs!*

Computing at warp speed!

It's an experience you shouldn't miss. And with TransWarp, you won't have to. Because TransWarp will run your IIe or II+ software *3.6 times faster* — that's 40% faster than Apple's IIGs!

No more yawning while your Apple™ slowly rearranges text or calculates spreadsheets. With 256K of ultra-fast RAM, TransWarp speeds up *all* Apple software—including AppleWorks, and all educational software, graphics and games. And it's compatible with all standard peripheral cards (such as RamWorks and Apple memory cards), hard disks, 3½" UniDisks, 80-column cards, modems, clock cards, mice and more! You name it, TransWarp accelerates it. There's even a 16 bit upgrade chip available.



"TransWarp is great! I have replaced all my other accelerators with it!"

*Steve Wozniak, the creator
of Apple Computer*

An important difference.

With TransWarp, software runs up to three times faster than with other cards, since the others can't accelerate programs in auxiliary memory. That's why TransWarp is so much faster than the rest. Nearly all of today's more powerful programs run partially or completely in auxiliary memory: programs like AppleWorks, Pinpoint, Managing Your Money, SuperCalc 3a, BPI and Pascal, to name a few. Why settle for a card that accelerates only part of the memory?

There's one more important difference. Since TransWarp doesn't use memory caching, you get *consistent* high speed performance.

A cinch to use.

Simply plug TransWarp into any slot in your Apple II, II+ or IIe—including slot 3 in the IIe. Instantly you'll be computing

at speeds you only dreamed about before. And should you ever wish to run at normal speed, simply press the ESC key while turning your Apple on.

Since TransWarp is completely transparent, you won't need preboot disks or special software. It's ready to go right out of the package!

Speed = Productivity

Imagine the productivity gains you'll achieve when your programs are running over three times faster. TransWarp is so powerful, your Apple will make IBM PCs™ and even ATs™ look like slowpokes.

- 3.6 MHZ 65C02
- 256K of ultra-fast on-board RAM
- Accelerates main and auxiliary memory
- Low power consumption for cool operation
- Totally transparent operation with all software
- Plugs into any slot, including slot 3 on the Apple IIe
- Accelerated 16 bit option available
- 5-year warranty

Satisfaction guaranteed!

Give your Apple the TransWarp advantage. With our risk-free 15-day money back guarantee, you have nothing to lose but wasted time. Call today!

TransWarp accelerator \$279
16 bit upgrade (may add later) \$89

For fast response:

Call Applied Engineering, 9 a.m. to 11 p.m., 7 days at (214) 241-6060. MasterCard, VISA and C.O.D. welcome. Texas residents add 5½% sales tax. Add \$10.00 if outside U.S.A. Or mail check or money order to Applied Engineering, P.O. Box 798, Carrollton, TX 75006.

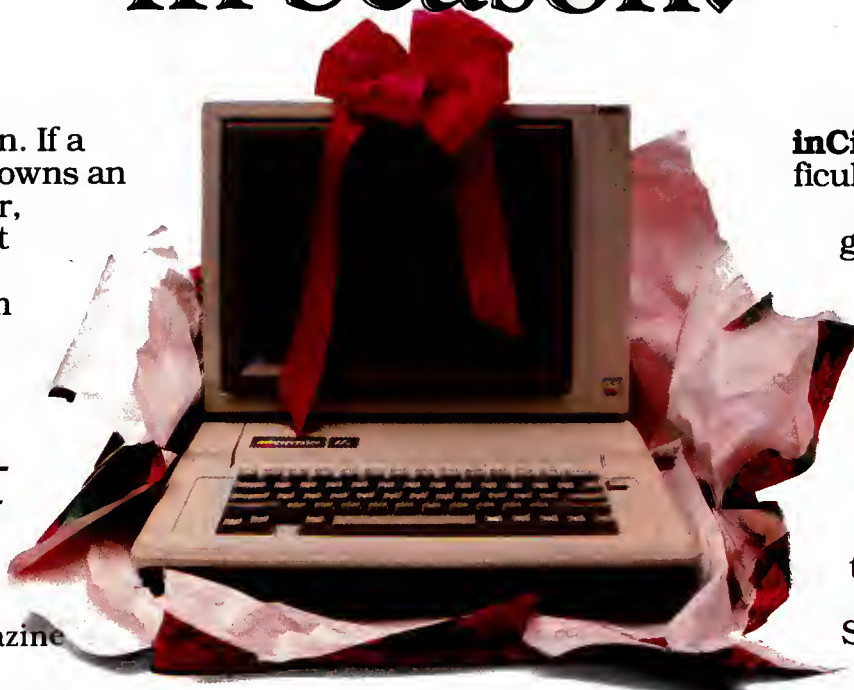
AE Applied Engineering
The Apple enhancement experts.

P.O. Box 798, Carrollton, TX 75006 (214) 241-6060

It's Christmas and Apples are in Season.

Christmas again. If a relative or friend owns an Apple II computer, you ought to start thinking about what to give them for Christmas.

Why not give them the most useful gift of all, **user-friendly information**. Information like that found only in **inCider**, the Apple II Magazine



inCider takes the difficulty out of learning about Applesoft, graphics programming, assembly language, games, business and educational applications. **inCider** makes computing easier and more fun. Isn't that what gift giving is all about? So, when it comes to Christmas this year, give **inCider**.

inCider The Apple II Magazine



YES!

I want to give the right gift to my Apple II friends. 12 issues for \$24.97.

☐ Payment enclosed ☐ Bill me after the holidays
(Please make checks payable to inCider)

My Name _____

Address _____

City _____ State _____ Zip _____

Please enter a one year gift subscription for:

Name _____

Address _____

City _____ State _____ Zip _____

Canada & Mexico \$27.97, 1 year only, US Funds drawn on US Bank. Foreign Surface \$44.97, 1 year only, US Funds drawn on US Bank. Foreign Airmail, please inquire. All gift subscriptions will begin with the first available issue in 1986.



66NB5

CW Communications/Peterborough • inCider • PO Box 911 • Farmingdale, NY 11737

keyboard. MultiScribe answers this complaint with ease and power. While programs like MacWrite define only a few keyboard commands, MultiScribe provides comprehensive equivalents of nearly all its pull-down menu options. You can use open-apple key combinations to access nearly all menu options directly.

In fact, MultiScribe's could be the best of all interfaces. For the novice or infrequent user, the mouse and menus guide you through the system. Once you gain familiarity and experience with the program, keyboard commands let you leave the mouse behind.

The Joy of Fonts

Your own creativity comes into play through the FontEditor program. Fonts can be anything you can imagine—from English script or foreign languages to series of small pictures or logos.

Each font is measured in points, each point equaling one pixel, or $\frac{1}{2}$ of an inch. Not coincidentally, most matrix printers are designed to print $\frac{1}{2}$ -inch dots, yielding a one-to-one mapping of display pixels to printout dots. The maximum size of each character in a font is 28 by 28 points.

Designing your own fonts is tedious and time-consuming; it took me three hours to create a complete 12-point Chicago font. The results, however, are well worth the effort. Once your font is finished, the Style and Size menus can embellish it in amazing ways—bolding, italicizing, outlining, or underlining any character you wish. You can also magnify a character up to three times normal size for use in headlines, banners, or presentation graphics.

The Dark Side

MultiScribe won't win any speed-typing contests. It maintains an admirable pace while editing new text, but begins to tread water when inserting text in the middle of an existing paragraph. What you type may take a moment or two to appear as the graphics page is reformatted. Similarly, while the pull-down menus unroll and recoil instantly, the same can't be said for scrolling a page up or down or jumping to the beginning or end of a long file. At those times you'll have plenty of time to rest your fingers.

All things considered, these are tolerable slowdowns for me and are not attributable to MultiScribe, but rather the double hi-res graphics on the Apple itself. More serious were my test

version's signs of adolescence—notably, bugs when searching for or replacing text.

In any given document, some strings were found and some weren't. Worse yet were the unwanted changes when text was found and highlighted. Once the desired string was automatically duplicated, and on another occasion the entire system hung, requiring a reboot.

I also experienced problems when scrolling to the bottom of a large (30K) document. Symptoms included mangled graphics around the edge of the editing window and a couple of system crashes.

When I called Styleware with these problems, I was impressed with its attention and support. The company was aware of the defects and immediately offered to send me a replacement disk, saying that the bugs were fixed in version 1.1 and that it was company policy to replace all defective copies with the most recent version.

Styleware also deserves compli-

ments for its well-written 260-page manual. Emulating the MacWrite documentation, the book progresses from an introductory "Learning MultiScribe" tutorial to task-oriented "Using MultiScribe" exercises, with specifics for both mouse and keyboard commands. Finally, a "MultiScribe Reference" lists each menu and command in the program.

Coming Attractions

Besides problem fixes, MultiScribe 1.1 includes a more Mac-like scroll bar, a List Volumes command that makes MultiScribe more of a disk organizer, and more flexibility in handling fonts. Extra font disks are \$19.95 each, including ten fonts and a program similar to the Macintosh Font-Mover to aid in installing and shuffling character sets.

Version 2.0, planned for the fall of 1986, is slated to include a near-letter-quality mode that works with current dot-matrix printers, and a limited form of macro functionality. Still more

AppleWorks Now does your Accounting!

Would you rather spend hundreds of dollars and countless hours on a dedicated accounting package or a fraction of the cost on a series of spreadsheet templates for AppleWorks?

The General Ledger system gives you Balance Sheets, Account Analysis, Income Statements, and more. Recommended for systems with expanded memory. Requires AppleWorks. Only \$89.95 -- Ask about subscriber discounts.

To Order...

1 800 222-7147
1 800 342-9822
in California

Your order shipped in 48-hrs.

The Q-mar group
(619) 455-7513



Ask for a FREE copy of our
AppleWorks Catalog.

appealing are several accessory programs, priced at \$29.95 each, that will work with all MultiScribe versions. One is a set of Mac-style desk accessories, complete with calculator, calendar, clock, puzzle, and control panel. Another is a spelling checker.

The most desirable add-on should be one called Picture Manager, which will let MultiScribe realize its full potential as a creative-writing tool—the ability to merge graphics and text in true Macintosh fashion, inserting MousePaint or Dazzle Draw sketches

and diagrams into MultiScribe documents. Even my early copy of MultiScribe impressed me enough to earn three stars; with bugs ironed out and such impressive enhancements due, this would be a four-star review for sure.

MultiScribe is not just another word processor. As well as any product to date, it taps the full potential of Apple graphics and opens a new door to creative writing. ■

Jafar Nabkel
Fort Collins, CO



Courtesy of Phil Rounseville.

Modem Cards: Two of a Kind

PROMODEM 1200A

Prometheus Products, 4545 Cushing Parkway, Fremont, CA 94538

1200/300-baud intelligent-modem card;
Apple II, II Plus, //e
\$295

APPLEMATE

Cermetek Microelectronics, 308 Borregas Avenue, Sunnyvale, CA 94088

1200/300-baud intelligent-modem card;
Apple II, II Plus, //e
\$295

	ProModem	AppleMate
Ease of setup	■ ■ ■ ■	■ ■ ■ ■
Ease of use	■ ■ ■	■ ■ ■
Documentation	■ ■	■ ■ ■
Support	■ ■ ■	■ ■ ■
Overall	■ ■ ■	■ ■ ■

Telecommunications, the power to link your Apple to a mainframe data base or the micro next door, is getting cheaper and easier all the time. Prometheus' ProModem and Cermetek's AppleMate are two moderately priced cards that emulate the familiar Apple Super Serial Card and Hayes Smartmodem, combining plug-and-play convenience with 1200-baud communications. Each has strong and weak points, but overall both are well-built, well-documented choices for on-line access.

I tested the modems in slot 2 of my enhanced //e, but they should work equally well in older Apples. Both functioned smoothly at 300 and 1200 baud, whether talking to local bulletin boards or the University of Massachusetts' VAX system.

ProModem 1200A

Many modems come bundled with communications software, but the ProModem 1200A has a terminal pro-

"EDITOR'S CHOICE" — inCider

Intrigue!

by Kinemation

A software mystery like you've never experienced before...

Someone kidnapped your brother Joe! Was it Kruger, the hard-boiled FBI agent? His conniving boss Powers? Or how about the urbane third-world Ambassador? His gorgeous secretary Lisa? Why does that Post reporter know so much? And who's that Spanish-speaking fellow by the Washington Monument? You'll find out whodunnit by talking with the people you meet in D.C.'s streets, hospitals, bars, embassies...

- More than 2000 possible solutions!
- Different every time you play!
- Characters' digitized photos change expressions as you interview them!
- Solve the mystery — and get a date with one of the characters!

**** SATISFACTION GUARANTEED ****
or money back if returned within 15 days of receipt.

\$39.95

Kinemation
Four Winds Road
Peterborough, NH 03458

Actual screen images from Intrigue!

TO ORDER, CALL: (800) 535-5665 (603) 924-6720 Or ask your dealer to order for you.

gram right on the board. My test model's built-in firmware was a no-frills package that nevertheless made it easy to change parameters such as baud rates and parity settings, upload and download ASCII files, or interact with DOS 3.3. In addition, the 1200A comes with a ProDOS disk-based program called ProCom-A, which combines communications features such as auto-dialing, log-on macros, and XModem transfers with a word processor that includes block moves and justification.

While the ProModem impressed me favorably, I am skeptical as to just how compatible it is with the Smartmodem and Super Serial Card (SSC). I had no trouble running the modem with its supplied software, but had no luck interfacing it with two specialized terminal programs, Talking Transend from Computer Aids Corporation (Fort Wayne, Indiana) and ProTerm from Micro Talk (Louisville, Kentucky).

Prometheus says the 1200A emulates a Super Serial Card driving a Hayes modem, and should work with any software that doesn't directly address the SSC hardware. According to Micro Talk, ProTerm fits that description, yet I couldn't make it work with the ProModem, no matter how I positioned the latter's jumper pins. On the other hand, let me stress that the ProModem worked very well with its own software.

Those jumper pins form my other ProModem complaint: two blocks, programmed by moving the tiny shorting pins to various positions, change settings such as your choice of SSC emulation versus the internal firmware. I wasn't pleased by this arrangement, and much prefer switches to do this job. Switches are much more easily changed and give a clearer visual indication of system settings; they make setting changes a matter of flipping the switches and doing a warm boot instead of removing the modem card, reinserting it, and starting over.

AppleMate

While the ProModem and ProCom-A are an attractive combination, I was also very impressed by Cermetek's AppleMate 1200. Although this giant circuit card has bare-bones firmware for Super Serial Card or Hayes commands, it doesn't come with full-powered disk software; I don't consider this a drawback, because there are many fine communications programs

already on the market. The AppleMate also has an extensive reference manual, geared for less-experienced computer users.

Like the ProModem, the AppleMate responds favorably to all Hayes Smartmodem commands, mimicking the most popular modem in the computer industry. The AppleMate can be operated either directly from the keyboard or through almost any terminal program; I liked this simplicity, because it let me get up and running without first having to configure my software.

I also found the AppleMate a snap to configure via its top-mounted DIP switches, designed to emulate many of the Apple Super Serial Card functions. The AppleMate powers up with command recognition and echo enabled, auto-answer disabled, and status messages enabled in English. I prefer my modems to awaken with auto-answer enabled; it was an easy change with the AppleMate.

As with the ProModem, I got favorable results when trying the AppleMate with all baud settings and data

formats for uploads and downloads between my IIe and the University VAX. All in all, I was highly pleased with the AppleMate, though disenchanted with the arrangement for adjusting the speaker volume—you must insert a small screwdriver into the card, a risky and downright silly proposition. (Why couldn't they put a thumbwheel control on the board?) But this is just a small imperfection, because the AppleMate is a near-perfect modem for the money.

Pick a Winner

From the control point of view, the ultimate modem card might be a hybrid, with the ProModem's easily turned, front-mounted speaker knob and the AppleMate's top-mounted switch bank. But from a functional standpoint, both modems proved snappy on-line performers, well worth their price tags. ■

Joseph J. Lazzaro
Revere, MA

AppleWorks New Educational Tools

FactWorks

Encyclopedia disks for the AppleWorks database and word processor. Includes information about Animals, Planets, Presidents, Great Explorers, Mountains, and More. Only \$32.95 each volume or \$84.95 for the set of three.

To Order...

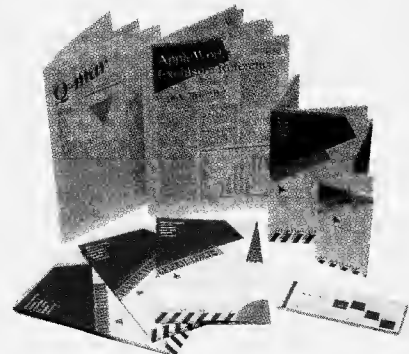
1 800 222-7147
1 800 342-9822
in California

Your order shipped in 48-hrs.

Teachers Tools

Teachers will find this the most complete grading system available. Store test information and results and weigh tests individually to affect the entire grade. Change the curve as you like, then look at the class average, weighted averages, listings, and more. Only \$49.95 -- Ask about subscriber discounts.

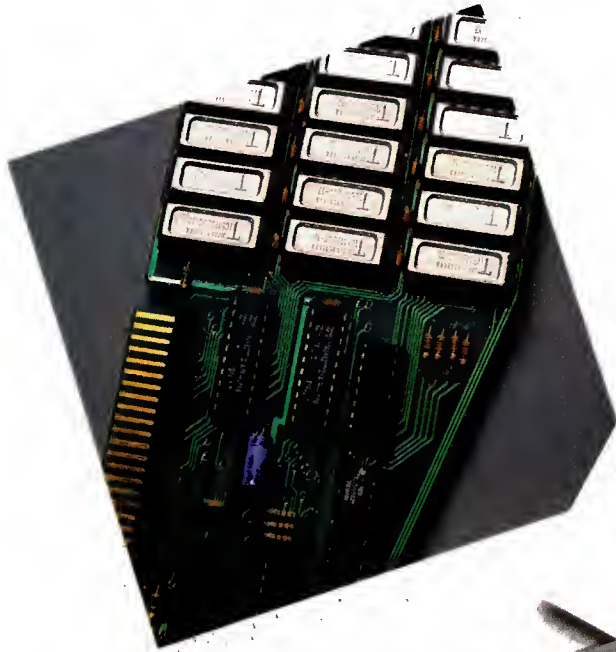
Ask for a FREE copy of our AppleWorks Catalog.



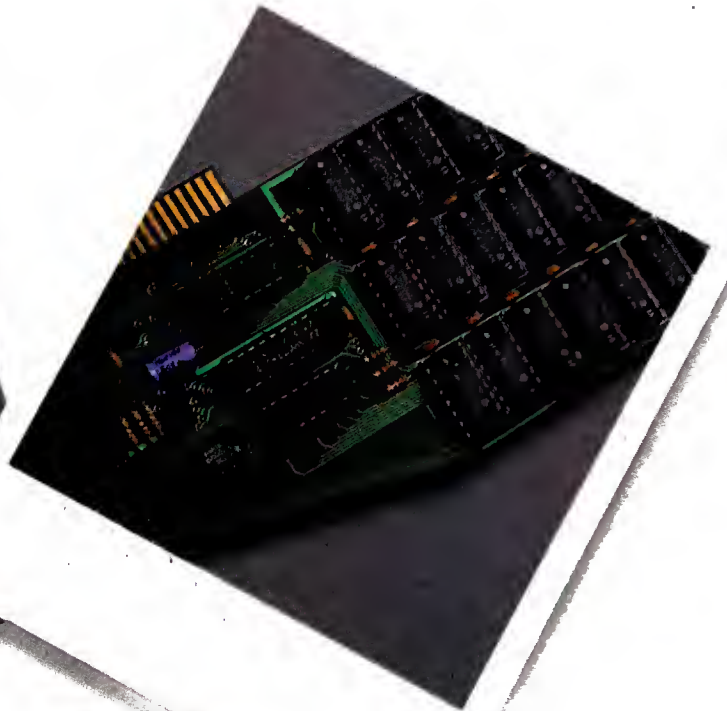
The Q-mar group
(619) 455-7513

Circle 287 on Reader Service Card.

We've already given the new IIgs two great memories.



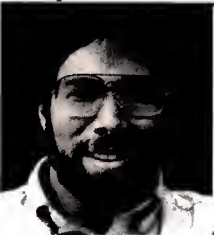
*gs-RAM Plus™
Up to 6 MEG on one card*



*gs-RAM™
Up to 1.5 MEG on one card*

IIgs memory expansion from the Apple expansion experts.

When the Apple IIgs was nothing more than a dream, Applied Engineering was already dreaming of improving it. So before the IIgs was even unveiled, we were ready with a surprise of our own: gs-RAM.



"I recommend Applied Engineering products wholeheartedly."

*Steve Wozniak, the creator
of Apple Computer*

Turn your IIgs into a giant.

Simply plug gs-RAM into the IIgs memory expansion slot and you've got up to 8 megabytes of RAM at your fingertips—all of it instantly and automatically recognized by the IIgs. gs-RAM is compatible with all IIgs software, including AppleWorks, as well as BASIC®, PRO-DOS, DOS 3.3, PASCAL®, "C" and CP/M®. It even has a built-in AppleWorks printer buffer and displays time and date right on the AppleWorks screen!

Grow by bytes or megabytes.

We offer gs-RAM in two configurations. So you can increase your memory 256K at a time (gs-RAM) or a megabyte at a time (gs-RAM Plus). Both offer full compatibility, lower cost than other boards, and easy expandability. And both are extremely low in power consumption. A fully expanded gs-RAM operates at only 375 ma, and gs-RAM Plus at only 270 ma (even with 6 megabytes on board!).

gs-RAM—*for normal memory requirements.*

gs-RAM is available with 256K, 512K, 1 MEG or 1.5 MEG of

memory already on board. If you don't need the full 1.5 MEG now, you can choose a gs-RAM with less memory and expand it up to 1.5 MEG in the future—or upgrade to gs-RAM Plus for a small charge.

With an optional piggyback card, you can expand gs-RAM even higher than 1.5 MEG! (Other cards are only expandable to 1 MEG.)

gs-RAM Plus—*for growing by leaps and bounds.*

gs-RAM Plus is the first Apple memory card to use 1 MEG RAM chips on the main board. It's available with 1 to 6 MEG on board. If you don't need the whole 6 MEG now, you can buy a gs-RAM Plus with less memory and easily expand it in the future.

gs-RAM Plus can be expanded up to 8 MEG with an optional piggyback card.

Applied Engineering is the largest supplier of Apple peripherals in the world. We *invented* the first large RAM cards for the Apple. With a 5-year "no-hassle" warranty and outstanding technical support, you can be sure gs-RAM and gs-RAM Plus will deliver the performance you're looking for—or return them within 15 days for a full refund.

Order today!

See your dealer or call Applied Engineering today, 9 a.m. to 11 p.m. 7 days. Or send check or money order to Applied Engineering. MasterCard, VISA and C.O.D. welcome. Texas residents add 5% sales tax. Add \$10.00 outside U.S.A.

AE Applied Engineering
The Apple enhancement experts.

P. O. Box 798, Carrollton, TX 75006

(214) 241-6060

CP/M is a registered trademark of Digital Research, Inc.



A Healthy Choice

TOBACCO; FITNESS

Marshware, P.O. Box 8082, Shawnee Mission, KS 66208

Self-help software; any 48K Apple II, one drive, color monitor recommended, printer optional

\$49.95 (Tobacco)

\$54.95 (Fitness)

	Tobacco	Fitness
Ease of learning	■ ■ ■ ■	■ ■ ■ ■
Ease of use	■ ■ ■	■ ■ ■ ■
Documentation	■ ■	■ ■ ■ ■
Support	■ ■ ■	■ ■ ■ ■
Overall	■ ■	■ ■ ■ ■

Marshware rounds out its Health and Fitness series with two programs designed to help students make decisions in favor of a healthy, substance-free lifestyle.

Tobacco

Tobacco (To Smoke or Not to Smoke) follows the pattern set by Marshware's earlier release, Alcohol (The Party). Like Alcohol, Tobacco uses a twofold approach. The program includes a disk-based tutorial and a teen-oriented simulation.

The tutorial encompasses 11 topics that focus on the dangers of smoking and brings to the student's attention such well-established health hazards as the effect of smoking on the heart and lungs. The subject matter is scientifically accurate and convincingly presented.

Tobacco's simulation, "A Group of Friends," is the more interesting program module. One or more people can run it, and it's appropriate for home and school applications.

The scenario highlights a group of a dozen computer friends. These boys and girls are 15 years old when the story begins, and you can watch what happens to as many as six of

them during their lives.

Choose a friend, like Anita, and peek into her life when she turns 17, 20, 25, 30, 40, 50, and 60 (if she reaches that age). You help your friend avoid the dangers of smoking by participating in her decisions.

Each round culminates in a Status Report showing whether or not your friend followed your advice and whether he or she suffered any consequences—such as being kicked off the swim team, losing a boyfriend, or any resulting health problems—of his or her actions. And if your computer friend dies, the program also states that matter-of-factly.

The most shocking part of the Status Report is the cumulative number and total cost of cigarettes smoked. By age 20, my friend Anita had smoked 43,800 cigarettes at a cost of \$2737.50. That money could have bought a lot of computer goodies.

Fitness

You've heard of a well-balanced diet. How about a well-balanced com-

puter program? Fitness (A State of Body and Mind) covers all the bases with respect to healthful lifestyle habits. The program's Main Menu helps you answer questions about your level of fitness, your exercise program, foods that are good for you, and chemicals that aren't.

The *Health-Related Physical-Fitness Test Manual*, which is published by the American Alliance for Health, Physical Education, Recreation, and Dance, is included in the Fitness package. This manual has instructions for properly measuring fitness in various ways—the one-mile run, sit-ups, the sit-and-reach test, subscapular and triceps skin-fold determinations, and resting and recovery pulse rates.

Each student can enter his or her results and print summary data. The program calculates and demonstrates results in a histogram, showing percentile rankings based on age.

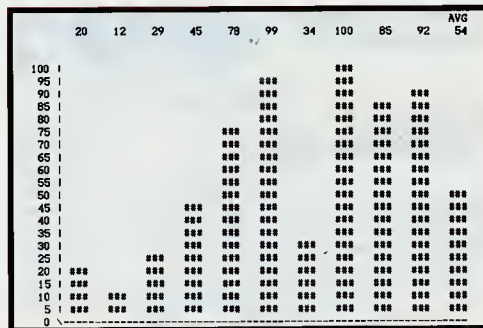
Adults can also use the program to determine their levels of fitness, but the guidelines used are appropriate only up to age 18. Unless you're in

Graph•On And you thought AppleWorks didn't have graphing power!

This will amaze you!

Now you can create bar graphs, multiple bar graphs, stacked bar graphs, and pie charts right in the AppleWorks spreadsheet.

Graphs automatically adjust when you change the information in them. Printing is easy. Only \$49.95 -- Ask about subscriber discounts.



Call for your FREE AppleWorks catalog.

To Order...

1 800 222-7147

1 800 342-9822

in California

Your order shipped in 48-hrs.

The Q-mar group
(619) 455-7513



top-flight shape, the results may be disappointing.

To demonstrate how exercise can help you become fit and trim, the program lets you take your real-time resting pulse rate, then gives you an overall assessment of your cardiovascular fitness, based on this limited test.

You interact with Fitness in other ways, too. The program gives you a list of enjoyable exercises, ranging from biking to jogging to walking. Select your favorite activity, and the program tells you its aerobic, muscular,

flexibility, and weight-control values. Fitness quickly puts to rest the question it first poses: "If you can ride, why walk?"

Fitness categorizes foods into five groups. You may recall the basic four—fruits and vegetables, breads and cereals, milk and cheese, and meat and protein. Fitness adds a catch-all group—fats and sugars. With so many fabricated foods in grocery stores today and so many meals eaten at fast-food restaurants, this last group has, shall we say, a lasting ef-

fect on many hips and thighs.

To add insult to injury, Fitness calculates the caloric cost of eating certain foods. Would you walk a mile for a cookie? If you want to learn more about the relationship between exercise, food choice, and weight control, Fitness can be a real eye-opener.

This program emphasizes the importance of fitness in helping you cope successfully with a stressful lifestyle. Too many people, it seems, choose drugs as a way to cope. Fitness decries such a choice and points out the hazards of illicit drugs, as well as the potential dangers of socially acceptable ones, such as alcohol and tobacco. ■

*Cynthia E. Field
Wakefield, RI*

APPLE MODEM. WITH EVERYTHING.

Plug-in Modem Card
with Software
for the Apple II, II+, IIE

\$69

Order Now!
Includes Over \$275
in Database Offers!

Buy two for only \$99!

The NETWORKER™ Modem

An incredible price on a great little modem. 300 baud full duplex, manual originate/answer with carrier detect LED. Just plug into any slot in your computer. Complete with DOS/ProDOS compatible Communications Software, Phone Cord, Instructions, and over \$275 in discounts and connect time for CompuServe, the Source, Dow Jones, and more. Communicates with any modem, including any Hayes modem. Made in USA. 1 year warranty. **Only \$69. Special offer! 2 for only \$99!**

15-day no-questions-asked money-back guarantee

Send this coupon with your check, money order or credit card information to:
TELSTAR, 145 Lincoln St., Boston, MA 02111

NETMASTER™ Advanced Software

Add NETMASTER Advanced Communication Software for File Transfer with Xmodem automatic error-checking, a Full-screen Text Editor, Dialing Directory, Printer Control, Disk Storage and Retrieval and more. Full documentation in an attractive 3-ring binder. Not copy-protected. Requires only 48K RAM memory. Originally \$79. **Now only \$29!**

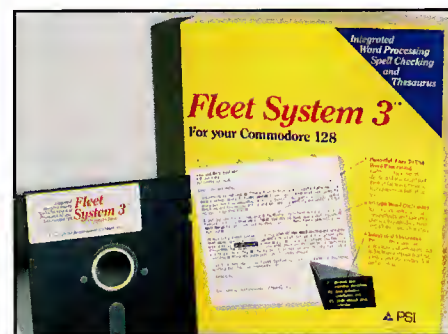
Please send me ☐ NETWORKER Modems (1 @ \$69 or 2 @ \$99) \$ _____
☐ NETMASTER Advanced Software @ \$29 \$ _____
Postage & Handling \$ 2.00
Total \$ _____

☐ MC ☐ VISA ☐ AMEX No. _____ Exp. Date _____
☐ I enclose a check or money order to: TELSTAR Communications

Name _____ (Phone) _____
Address _____
City _____ State _____ Zip _____

Or Call Toll Free MC, VISA, AMEX Accepted
1-800-344-3311 In MA 1-617-423-1237

© 1986 Telstar Communications
Apple is a registered trademark of Apple Computer, Inc.
Networker, Netmaster trademarks ZOOM Telephonics, Inc.



More and Less than Word Processing

FLEET SYSTEM 3

Professional Software, 51 Fremont Street,
Needham, MA 02194

Word processor with spelling checker and thesaurus; 128K Apple IIe or IIc, one disk drive, printer, ProDOS
\$79.95

Ease of setup ■■
Ease of use ■■■
Documentation ■■■
Support ■■
Overall ■■

Did you ever try a program you liked, but hesitated to recommend to others? PSI's Fleet System 3 is attractive at first glance—an integrated word processor, spelling checker, and thesaurus for \$79.95—and attractive at third glance, the stage when you've overcome its idiosyncrasies to find it a smooth, fast performer with impressive extras. But at second glance, the period of coming to terms with the program, Fleet System 3 is rather homely, stripped-down software with awkward quirks and omissions.

Some //e and //c programs, such as WordPerfect and MousePaint, are inspired by 16-bit IBM or 32-bit Macintosh software. Fleet 3 is an enhanced version of a popular Commodore 64 program, and its early 8-bit heritage shows—it harks back to the time when word processors made nice, easily transferable ASCII text files, because other kinds of files hadn't been invented yet. Back then, there wasn't any way to use formatting or control codes except inserting them by hand; in that respect, Fleet 3 is even more laborious than another early 8-bit program, WordStar.

But who said simple software's necessarily bad? Nothing beats text files for sending over phone lines or exporting to other programs, and Fleet 3 is a one-drive user's dream: Once it's loaded, you don't need the program disk again. You can work with no disk in the drive at all, until you want to use one of the other two Fleet disks (thesaurus or spelling dictionary) or save your work to a data disk. On the other hand, considering that its three-part, disk-swapping program is a natural for transfer to a UniDisk 3.5 or hard disk, Professional Software's policy is shameful: The word processor is copy-protected, and a backup costs an additional \$15.

No Tildes or Backslashes

Fleet System's combination of strangeness and simplicity begins with its opening message—you must make sure the caps-lock key is up (Fleet 3 won't work otherwise; the shift-lock function is served by the tilde key) and choose an 80- or 120-column display. The latter allows horizontal scrolling through tables set up with Fleet 3's numeric tabs, which align numbers at a decimal point and can sum a column (with negative numbers in parentheses or with minus signs before or after them).

The usual top-of-screen margin and tab ruler is only a tab indicator in Fleet 3; text always fills the width of the screen, with word wrap at 80 or 120 columns. A status indicator shows the cursor line and column number; letters next to it appear in standard or inverse video as you toggle numeric, shift-lock, and other modes. You change from typeover to insert mode by pressing shift-backslash; the backslash by itself inserts a space, and pressing the escape key, then backslash, inserts a line.

Fleet 3 is easy to use once you master its minor inconsistencies. Most commands are executed by pressing Esc (to toggle function mode), then one or more keys, such as Esc, F to find text or Esc, D, W, and Return to delete a word (Fleet 3 has no undelete ability and asks for confirmation of deletions). There are, however, a few apple-key commands to remember, such as apple-tab to set a tab (Esc, tab clears all tabs). Pressing apple-Esc offers a menu of disk functions; loading a file or inserting one at the cursor is

as simple as typing 2/LETTER to specify a drive and filename.

Chores and Complaints

The program is quick and responsive, even when inserting text in the middle of a file, but some of its good ideas are poorly executed. Cursor movement is awkward (no paging up or down, though holding Esc and an arrow key speeds scrolling, and moving by word puts the cursor between words instead of on their first letters).

The C-VUE
is now compatible
with the Laser 128!

THE FIRST TOTALLY PORTABLE APPLE //C

Use it wherever you are!

*The C-VUE
is now
\$299⁰⁰
just in time
for Christmas!*



C-VUE Flat Panel Display* was \$349

PRE-CHRISTMAS SALE \$299.00

Prairie Power System. \$150.00

512K Multiram CX. \$225.00

C-VUE Back Lighting \$250.00


- If you don't see it CALL US for a complete list of available products
- Next day delivery available

MasterCard and VISA accepted 

FREE! Price Quotes on all Apple Products & Peripherals

Ordering Information:
(All products F.O.B. San Diego)
1-800-GET-CVUE (AK, HI, & outside CA)
(619) 274-1253 (within CA & outside U.S.)

*** 14-day
money-back
guarantee**

 Checkmate Technology, Inc.

ROGER COATS P.O. Box 171466, San Diego, CA 92117

Prices subject to
change without notice

All search-and-replace jobs are universal, with no pauses or confirmation of individual changes. Blocks or ranges can be marked only in increments of screen lines, not words or sentences.

One of Fleet 3's promising features is the "extra text" area, space for a second document in memory; you flip between the two by pressing Esc, X. It's great for holding scratchpad notes or the supplied help file, but there's no easy cut-and-paste transfer between files: you must identify an extra text block as a named range or macro, typing equal signs, abbreviations, and inverse apostrophes, before you can summon it for insertion into the main text.

Now, about those imbedded formatting or control codes. Nearly every word processor offers a way to change margins, force page breaks, or put a single-spaced quotation into a double-spaced document; Fleet System 3 does the same, letting you type Esc, J followed by cryptic codes anywhere in your file you like. Since its chock-full 80-column display bears

little resemblance to most business letters, pressing apple-tilde enters a "what you see is what you get" preview mode, printing a file to the screen to see page breaks, justification, double spacing, and so on.

That's reasonable enough, but Fleet 3's reliance on plain text files makes it the dumbest word processor around when it comes to format settings. There's no such thing as a default; you must begin every file by specifying not only margins and spacing, but even page length (such as the standard 11 inches or 66 lines), in a line of gibberish such as `pp66:pg54:vp6:lm10:rm72:sp2:ju1`. It does a great deal to reduce Fleet 3's speed and simplicity.

The Nicer Side

Although Fleet 3's editor reminds me of embedded-code text formatters for Radio Shack's 24K Model 100 portable, its spelling checker and thesaurus are surprisingly good. The checker simply highlights unrecognized words instead of suggesting al-

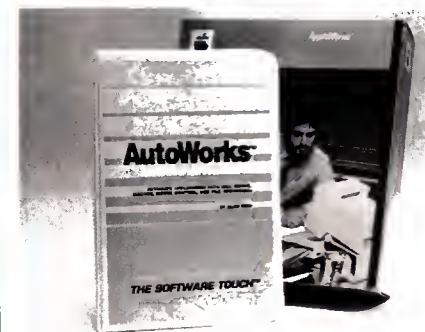
ternate spellings as high-end programs do, but it's easy and rapid, supplying a total word count, unique word count, and checking a 4000-word file in less than two minutes.

The 90,000-word dictionary missed *understatement*, *sidebar*, *desktop*, and *synthesizer*, but knew *mucilage*, *biplane*, *trptych*, *ennui*, *hobgoblin*, and other attempted traps. Adding words to a personal user dictionary is easy, and an auxiliary program lets you do everything from checking the user dictionary to analyzing a file's average sentence length.

The thesaurus, while limited to a smaller vocabulary (no synonyms for *terrible*, for instance, but lots for *better*), is equally friendly. It lets you look for either synonyms or antonyms for a word you either type on a status line or copy from your document with the up arrow. Selecting a synonym with the cursor and pressing the return key replaces the word in your text.

Overall, Fleet System 3 is a low-priced program with fairly high-class features, decent documentation, and lively performance. If its basic word-processing functions were as good as its advanced ones, it'd be worth recommending. ■

Eric Grevstad
inCider staff



AppleWorks Deluxe

AUTOWORKS

The Software Touch, 9842 Hibert Street, Suite 192, San Diego, CA 92131

AppleWorks enhancements; 128K IIe or IIc, ProDOS, AppleWorks; mouse optional \$39.95

Ease of learning	■ ■ ■ ■
Ease of use	■ ■ ■ ■
Documentation	■ ■ ■
Support	■ ■ ■
Overall	■ ■ ■ ■

If you use AppleWorks, AutoWorks offers you five appealing enhancements at a mere \$8 apiece: mail

WORK FORCE II™

"A Valuable, Indispensable Tool..."

Six Financial and Productivity Programs on one disk. Menu driven, ultra friendly, powerful. Compatible with the IBM PC, XT, AT, jr, COMPAQ, AT&T 6300, TANDY 1000, true Compatibles, and the Apple IIc, IIe, II+.

THE LOAN ANALYZER: Display or print loan amortizations starting or stopping at any period. Begin loans in mid-year Work Force II is used by banks, CPA's & and real estate professionals across America.

Compare these features:

- Variable Interest
- Rule of 78's
- Balloon Payments
- Yearly Total Interest
- Unknown Term
- Payment Amount
- Negative Amortization
- Total Interest & Payments
- Amount which can be Financed
- Present Value of Capital Leases

THE LINE WRITER™: Line-at-a-time correctable typewriter. Makes envelopes, forms, memos, and labels a snap. Faster and easier to use than your word processor.

THE BALANCING ACT™: Unique checkbook balancing system. No need to enter every check & deposit. Change entries, add entries, or print entries. A few minutes each month does it all.

PLUS! Full Function Printing Calculator — Wage & Income Analysis
Future Value of Savings, Investments, IRA's

Greg Glau, inCider "Borrowing money is no problem with the loan analysis section to guide you.

Work Force II is easy to understand and operate. It's an honest value..."

Les Schmeltz, MICRO-TIMES: "WORK FORCE II may be one of the best bargains around."

Call Toll Free
ORDERS ONLY

1-800-525-CORE

30 DAY
MONEY-BACK
GUARANTEE

Apple is registered trademark of Apple Computer. IBM is a registered trademark of International Business Machine.

- ☐ Rush me WORK FORCE II for the Apple at \$39.95
- ☐ Rush me WORK FORCE II for the IBM at \$47.95 (prices include shipping)
- ☐ check or money order ☐ VISA ☐ MC ☐ AE ☐ COD (add \$4.00 for COD)

Arizona residents add 6.5% Sales Tax. Overseas add \$5.00

Cards # _____
Signature _____ Valid From _____ to _____
Name _____ Phone _____
Address _____
City/State/Zip _____

Core Concepts, Inc.

P.O. Box 24157 Tempe, AZ 85282
AZ residents & inquiries call (602) 968-3756



merge, macros, new commands, mouse control, and improved file management. Any one of these features may justify the total program price for you.

In fact, my only complaint about the package involves that truism, "You can't have it all." AutoWorks is incompatible with another popular AppleWorks add-on, Pinpoint (and with a competitive product, Beagle Bros' MacroWorks); I keep one copy of AppleWorks enhanced with Pinpoint and another with AutoWorks, using one or the other disk depending on my current project. The choice depends on whether I want access to non-AppleWorks tools, or want to stay in AppleWorks and work wonders.

For example, business owners or club officers will appreciate the ease with which AutoWorks performs mail merging. First, you create an AppleWorks data base with pertinent information like names and addresses. Next, you use the AppleWorks word processor to prepare your form letter, using numeric codes that correspond to the order of categories in the data base. If "Name" is first in the data base, it will have the code "<#1>" in the form letter.

With both files on the desktop, press open apple-X, watch the AutoWorks menu pop up on screen, and select the mail-merge option. At this point, you literally sit back and admire the speed and style of the merging process. As one form letter prints out, the screen shows substitutions being made in the next. After all the letters are printed, you can proceed to other AppleWorks tasks, since you never left AppleWorks in the first place.

The mail-merge feature makes it just as easy to fill out forms such as invoices. In data-base codes like the one above, simply substitute an asterisk for the pound sign. This turns off the reformatting that's necessary when you merge information into a letter.

Command Shorthand

Another powerful—and practical—feature lets you create macros, short codes that substitute for long sequences of commands, to simplify your AppleWorks chores. Instead of typing command keystrokes, you can create a macro, store it, and then call up the sequence by pressing only the solid-apple and one or two other keys.

For example, one of AutoWorks' predefined macros centers a line of

text at the touch of solid apple-C. It's a lot easier than going to the AppleWorks Options, selecting center justification, going back to your document, back to Options to unjustify, and back to the document again.

You can use all, some, or none of AutoWorks' roughly four dozen supplied macros; some of the others automatically move the cursor home in a spreadsheet, number an outline with Roman numerals, or create a numeric keypad in the middle of your keyboard. If reading this has made you think of specialized macro tasks, you can easily create your own.

In a macro-related matter, two of AutoWorks' added commands give AppleWorks true delete and undelete capacity—moving words or blocks of text to the clipboard so that you can undelete them if you change your mind.

AppleWorks Meets Mouse

If you've longed for a mouse-controlled AppleWorks, it's yours thanks to AutoWorks. You can use the mouse to make menu selections and to scroll

through files. Pressing the mouse button brings you to the beginning or end of a document; double-clicking (s-l-o-w-l-y) substitutes for pressing the escape key to return to a prior menu.


Frankly, I'm accustomed to using the keyboard to move around AppleWorks and the "ruler" (open apple-1 through 9) for scrolling up and down documents. I can see the value of using the mouse to make diagonal moves, however. AutoWorks doesn't turn off keyboard control, so use the mouse only if it's more convenient for you.

The AutoWorks "Read Disk" option reads ProDOS disk directories into an AppleWorks word-processing or database file. If your disk library seems to have grown out of bounds (and whose hasn't?), AutoWorks can help you catalog your holdings.

The program (not copy-protected) is easy to install on your AppleWorks Startup disk, as well as easy to use; within a couple of hours, I learned its features well enough to make them productive for me. The reference manual has complete, clear instructions.

**NEW technique
for winning at
Blackjack**

**Computer tested,
authenticated
and verified**





CHEZ 21

BOY 16 WINS \$1 MILLION

His APPLE became a Blackjack table at Caesar's Palace!

Complete, with all the glitter, CHEZ 21 will dazzle from 1 to 5 players at a time, remember their names and bankrolls (along with everyone else who plays) and TEACH THEM TO WIN with the NEWEST, SIMPLEST, most reliable and usable technique in the history of the game. Makes card counting obsolete. Proven successful in Casinos from Monte Carlo to Las Vegas. Requires Apple II, II+, IIc/IIe with 48K RAM and one disk drive.

For VISA/MasterCard orders Call our 24 hour 7 day Order Machine (512) 629-8062 or send Check or Money Order for \$39.95 plus \$2.00 S+H to Microlon, Inc. 24 Royal Crest, New Braunfels, Texas 78130.



Texas residents please add \$2.05 each for sales tax.

AutoWorks is compatible with ProDOS peripherals, including RAM disks, hard disks, and the UniDisk 3.5. Certain versions of RAM-disk utilities may not be compatible, however. ■

*Cynthia E. Field
Wakefield, RI*



A MIDI Musical Package

MIDI USERS SEQUENCER/EDITOR

Roland Corp., 7200 Dominion Circle, Los Angeles, CA 90040

MIDI musical interface and software; Apple II Plus (64K), IIc, IIe, MIDI synthesizer MPU-401 MIDI interface unit, \$200; MIF-APL interface card, \$110; MIDI Users Sequencer/Editor software, \$150

Ease of setup	■ ■ ■ ■
Ease of use	■ ■ ■
Documentation	■ ■ ■ ■
Support	■ ■ ■
Overall	■ ■ ■

MIDI, the Musical Instrument Digital Interface, is the communications standard for electronic musical instruments. It makes possible the interfacing of electronic synthesizers such as keyboards, drum machines, and guitars to a computer. With software such as Roland's MIDI Users Sequencer/Editor (MUSE), version 1.10, you can record with your Apple what you play on the MIDI instrument (in my case, a Casio CZ-101 keyboard), then modify the measures and tracks to get just the right sound. In short, a sequencer/editor is a word processor for musicians.

What's so great about that? Well, this Apple-powered musical tool reduces the need for tape recorders, makes multi-track recording and editing easier, and brings serious electronic music composition within the financial grasp of many computer users (\$460 for Roland's hardware/software bundle). For the budding musician or the pro, MIDI is a dream come true.

Getting Started

MUSE is a sophisticated, MIDI-reliant music-composition and editing program that works with Roland's MPU-401 MIDI unit and MIF-APL interface card. The equipment seems complicated at first glance, but a quick look at the owner's guide's introductory manual will soon put you at ease. I was relieved by the clear documentation "for the masses," written by a real musician and Roland user.

The interface card and unit were a snap to install. Photos in the owner's guide helped quite a bit. The card can occupy any free slot in the computer; just remember which you used, because you'll be prompted for its number whenever you load the program. As for MUSE itself, the program is completely menu-driven and allows joystick, paddle, or keyboard input. You simply point and click your way through its features—two main menus with about 24 options, including numerous windowed submenus.

A Little MUSE Music

To begin, you must create a musical piece, whether one measure on one track or a complete song. Once you select the Record feature from the menu, you can choose any of eight recording tracks. A set-up screen lets you enter the number of measures to record; during recording, MUSE automatically stops when your preset number has passed.

If you like, you can bypass the set-up window and start recording with no preset length—just click when you've finished performing. MUSE lets you record up to 250 measures at one time; the program handles approximately 6000 notes.

When recording multiple tracks, you can specify the measure from which you want to start recording (adding a new track to the middle of a prior piece, for example), or mute tracks during playback or the recording of another piece. You can also erase individual tracks if you mess up a session.

LEGEND™ CARDS

EXPAND APPLEWORKS™

on Apple II, II+, IIe,
IIc and Franklin

C'CARD™...1 MEG FOR IIc \$369

**FREE APPLEWORKS™ PATCH
256K to 1 MEGABYTE OF MEMORY
HIGH SPEED DISK EMULATION
USE MOUSE WITH APPLEWORKS™**

S'Card™ for the II, II+, IIe, III, Franklin

• Slot Independent • 1024K APPLEWORKS™ on Apple II, II+, IIe, Franklin

E'Card™ for the IIe

• 80 Column Display • RGB • Use Mouse with APPLEWORKS™

Send me info on:

- ☐ C'Card (IIc)
- ☐ E'Card (IIe)
- ☐ S'Card (II/II+, IIe Franklin)
- ☐ Desktop Mouse

NAME _____ PHONE _____

ADDRESS _____

CITY _____ STATE _____ ZIP _____

LEGEND INDUSTRIES LTD. (800) 5-LEGEND or (313) 674-0953-2220 Scott Lake Rd-Pontiac, MI 48054
Legend, E'Card, S'Card, C'Card and Desktop Mouse are trademarks of Legend Industries, LTD. Apple and AppleWorks are trademarks of Apple Computer, Inc.

**SILICON
EXPRESS
DISKS**
SS/DD 6.95
DS/DD 7.95

**VERBATIM
OR MAXELL**
SS/DD 13.95
DS/DD 16.95

ELEPHANT
SS/DD 7.95
DS/DD 8.95

DATA CASE
7.95

**SILICON
EXPRESS**

LASER 128—APPLE COMPATIBLE COMPUTER \$395.95

INSIDE OHIO
1-800-225-0755
YOUR TOLL FREE ACCESS OUTSIDE OHIO
1-800-228-0755
CALL...FOR THE BEST PRICES...
BEST DELIVERY...
We have hundreds of other
programs in stock at
Fantastic savings.

Aerojet	24.95	Delta Drawing	27.95
Additional Fonts	8.95	DiskQuick	14.95
Adventure Const.	30.50	Disc Repair Kit	8.95
Airheart	22.95	Dollars & Sense	66.50
Algebra I	26.95	DDS Boss	11.95
Algebra I thru IV	ea. 26.95	Double-Take	17.95
Algebra V & VI	34.95	Dragonworld	22.75
Alphabet Zoo	18.95	Early Games	15.95
Alpha Plot	24.89	Easy as ABC	20.95
Alter Ego	34.95	Eidolon	23.50
American Challenge	27.95	Enchanter	23.69
A Mind Forever Voy.	28.95	Essential Data Dup	41.95
Animate	46.95	Europe Ablaze	30.50
Archon I	22.00	Extra K	19.95
Archon II	24.25	F-15 Strike Eagle	19.95
ASC II Express	72.50	Facemaker	17.95
Assembly Lines Bk.	16.95	Factory	31.95
Auto Duel	32.95	Family Roots	149.95
Auto Works	27.95	Fantavision	26.95
Back-it-up III	42.00	Farenheit 451	22.75
Bag of Tricks #2	28.00	Fat Cat	17.95
Ball Blazer	23.49	Financial Cookbook	30.00
Ballyhoo	22.95	Flex Type	14.95
Bank Street Filer	38.95	Flight Sim. II	30.50
Bank Street Mailer	38.95	Fontrix	53.25
Bank Street Writer	38.95	Fontworks	34.95
Bank Street Speller	38.95	Forecast	34.00
Bard's Tale	27.50	Fontworks	34.95
Baron	22.50	Footblitzky	22.00
Beagle Bag	14.95	Fraction Factory	15.95
Beagle Basis	17.95	Fraction Fever	17.95
Beagle Graphics	29.95	Frame-Up	14.95
Beneath Apple DOS	13.95	Game Maker	34.95
Bnth. Apl. Pro DOS	13.95	Gato	20.45
Big U	16.95	Gertrude's Puzzles	24.75
Black's Law Dict.	27.00	Gertrude's Secrets	24.75
Blazing paddles	64.95	Goren Bridge	51.95
Bookends	64.95	Ghostbusters	22.00
Bookends Extended	20.95	GI Joe	19.95
Bop & Wrestle	22.00	Grammar Gremlins	64.95
Borrowed Time	30.95	Graphics Department	21.95
Breakers	41.95	Graphics Expander	26.95
Breakthru Ardennes	22.45	Graphics Magician	57.95
Carmen Sandiego	29.95	Graphworks	24.95
Carmen Sandiego USA	22.45	GPLE	27.95
Carmen Sandiego World	22.45	Hacker	26.95
Captain Goodnight	19.45	Hacker II	69.95
Cat Graphics	13.95	Handlers Package	17.95
Certificate Maker	34.95	Hey Diddle Diddle	21.75
Chshp. Load Runner	19.45	Hitchhiker's Guide	47.95
Chart 'n Graph Tibx.	23.95	Home Accountant	19.95
Classmates	34.95	Home Connection	19.95
Clip Art Vol. 1	15.95	Homework +	41.00
Clip Art Vol. 2	21.25	Homework Filer	34.95
Commworks	57.95	Image Printer II	23.50
Complete Graphics	27.95	Impossible Mission	26.00
Conflict in Vietnam	27.95	Infiltrator	20.95
Copy II +	18.50	Infidel	14.95
Coveted Mirror	11.95	I.D. Silver	29.95
Crimson Crown	95.00	Jeeves	18.95
Crosstalk	28.50	Juggle's Rainbow	19.45
Crossword Magic	22.95	Karateka	17.95
Crusade in Europe	21.95	Kids on Keys	18.89
Crypt of Medea	21.50	Kid Writer	17.95
Cut & Paste	23.69	Kinder Comp	19.50
Cutthroats	23.95	Knight of Diamonds	28.00
Database Toolbox	33.95	King's Quest I or II	23.49
Dazzle Draw	19.95	Koronis Rift	22.50
D-Code	28.00	Legacy of Lyligamyn	39.95
Deadline	19.95	List Handler	27.95
Decision in Desert	19.95	Little Comp. People	56.95
		Locksmith	19.45
		Lode Runner	45.00

Science Tool Kit	39.95	Transitions	13.95
Seastalker	22.00	Transylvania	11.95
Sensible Grammar	52.95	Trinity	27.95
Sensible Speller	63.95	Triple-Dump	18.95
Shadowkeep	22.75	Turbo Pascal 3.0	34.95
Shape Mechanic	20.00	Turbo Database Tibx	27.95
Sideways Pro Dos	46.95	Turbo Tutor	20.50
Silent Service	19.45	Tycoon	22.50
Silicon Salad	12.69	Type!	29.95
Skyfox	24.25	Typing Tutor III	28.50
Snooper Trp I or 2	22.95	Ultima III	33.25
Solo Flight	19.95	Ultima IV	33.25
Sorcerer	26.00	Understanding IIE	17.95
Speed Reader II	36.95	Understanding II +	15.95
Spell Breaker	34.95	Universal file conv	24.95
Spellcopter	23.50	Utility City	15.25
Spell II	26.50	Video Toolbox	23.95
Spellworks	29.95	Visable 6502	31.75
Spitfire Simulator	24.75	Wilderness	38.95
Spy Hunter	26.00	Will Writer	27.95
Spy vs. Spy	24.95	Winter Games	21.45
Squire	22.50	Wishbringer	27.95
Starcross	28.00	Witness	22.00
Star Lg. Baseball	20.95	Wizardry	26.50
Star Trek	27.95	Wizard's Toolbox	23.95
Sticky Bear ABC	23.75	Wzprint	14.25
Basket Bounce	23.75	Word Attack	26.95
BDP	23.75	Word Handler	39.95
Car Builder	23.75	Word Perfect	125.95
Math 1 or 2	23.75	Word Spinner	20.50
Numbers	23.75	World's Great. Bball	19.95
Opposites	23.75	World's Great. Ftbl	22.45
Printer	23.75	Write Choice	26.45
Reading	23.75	Zork I	21.75
Shapes	23.75	Zork II or III	24.75
Spellgrabber	23.75		
Town Builder	23.75		
Typing	23.75		
Story Machine	17.95		
Story Maker	24.95		
Sum. Games I or II	22.45		
SuperCalc 3A	109.95		
Suspect	26.00		
Suspended	28.00		
Sword of Kadash	11.95		
Take 1	34.00		
Technical Dictionary	27.95		
Temple of Apsai Tri.	22.45		
Terrapin Logo	54.50		
Terrapin Utilities	14.95		
Think Tank	88.89		
Thinkworks	64.95		
Time is Money	57.45		
Tip Disk #1	12.00		
Toy Shop	39.95		

Lemon	31.95
Lime	48.95
Mach II II+ Joystick	26.20
Mach II IIE Joystick	26.20
Mach III II+ Joystick	32.20
Mach III IIE Joystick	32.20
Micromodem IIE	139.95
Mockingboard A	65.95
Mockingboard B	65.95
Mockingboard C	116.00
Mockingboard D	126.45
Mockingboard A-MAX	38.95
Multiram CX 512K	209.00
Multiram IIE (16 bit)	154.00
Multiram CX 512K (16 bit)	394.00
Multiram RGB 64K	154.00
Multiram RGB 256K	194.00
Multiram RGB 512K	234.00
Multiram RGB 768K	274.00
Multiram RGB 1024K	314.00
Multiram IIE 80/64K	124.00
Multiram IIE 80/256K	159.00
Multiram IIE 80/512K	194.00
Multiram IIE 80/768K	229.00
Paddlesticks	26.50
Parallel Printer Card	44.95
Print-It	123.50
Prometheus 1200A	254.95
Prometheus 300C	99.95
Super Serial Card	84.95
System Saver Fan	59.95
Thunder Clock	102.95
Video 7 (SCG7)	109.95
Wildcard II	69.95
ZEE 80A Checkmate	54.95
Zoom IIE	109.00

PRINTERS

Citizen 1200	CALL
Star NX-10	269.95
Star SG-15	394.95
Star SD-10	344.95
Star SD-15	474.95
Star SR-10	494.95
Star SR-15	594.95
Star Powertype	344.95
Okidata 182P	229.95
Okimate 20	209.95
Okidata 192P	399.95
Printer Stand	16.95
Colored Printer Rbns	CALL
Color Paper Pack	12.95

MDNITORS

Magnavox Monitors	CALL
Amdel Color 600	414.99
Samsung Color	169.95

YOUR ORDER FORM SILICON EXPRESS

5955 E. Main St. Columbus, Ohio 43213

NAME _____

ADDRESS _____

CITY _____ STATE _____ ZIP _____

CHARGE CARD # _____ Exp. Date _____

QTY.	DESCRIPTION	PRICE

Computer Type _____ SHIPPING _____
Phone No. _____ TOTAL _____

No additional surcharge on Mastercard, Visa, or School purchase orders. Personal checks allow 2 weeks. Shipping charges are \$3.00 minimum. Ohio residents add 5 1/2% state sales tax. Prices subject to change without notice.

SILICON EXPRESS

5955 E. Main St. Columbus, Ohio 43213

1-614-868-6868

EXPOSE YOURSELF... TO THE KACHE PLUS CARD.

Accelerate Your Floppy Drives...To Out Perform Any Hard Disk Drive **PLUS** Gain The Added Features Of Up To 15 Multi-Functions

*The Kache Plus Card...Shocking Speed **PLUS** Expanded Performance-*The Kache Plus Card is a powerful floppy disk adapter board for Apple II systems that operates up to six floppy drives. It offers faster accessing speed than hard disk drive **PLUS** the added features of up to 15 popular expansion boards.

*Faster Accessing Than Hard Disk Drive-*The Kache Plus Card combines an advanced form of RAM, known as cache memory, with the power of a microprocessor to achieve a 2.5 to 1 speed advantage over hard disk accessing. Governed by a Hitachi 64180 microprocessor, the Kache Plus Card becomes an intelligent RAM disk card that...

AUTOMATICALLY fills cache memory with up to 512K of your "most frequently accessed data"

AUTOMATICALLY maintains the data content of cache using the "LUFO" method (Least Used First Out)

AUTOMATICALLY anticipates data requests and transfers needed files to your Apple's CPU electronically

AUTOMATICALLY saves data in RAM disk mode for future transfer to floppy disk

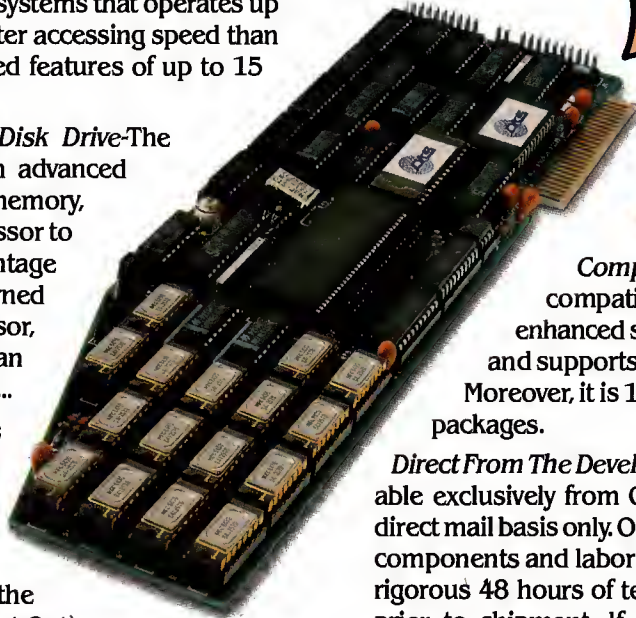
AUTOMATICALLY time and date stamps files written to disk

*Multi-Function Features-*The Kache Plus Card also doubles as a multi-function board with a choice of up to 15 expanded features for your Apple II system. And, by utilizing the benefits of the Kache Plus Card's cache memory and 64180 microprocessor, each feature offers a performance advantage over comparable expansion boards on the market.

The standard Kache Plus Card comes complete with several of the most popular expansion features to date. And, with the optional features offered it can be easily upgraded to grow with the sophistication of the computer market. In addition, future innovations from OKS will be carefully engineered for easy assimilation into the standard Kache Plus Card design.

Standard Features: 256K Cache Memory/RAM Disk, On Board Clock/Calendar with Battery Back-up; Utilities for Clock/Calendar; Back-up Utilities Diskette; Concurrent Operation of 2 Floppy Drives; User Friendly/Mouse Compatible Menus; On Board Firmware Utilities for Future Upgrade.

Optional Features: 512K Cache Memory/RAM Disk Upgrade; Expander Module which includes: Concurrent Operation of 6 Floppy Drives, Parallel Printer Interface, 256K/512K Parallel Print Buffer, Super Serial Interface, 3 Line Serial Interface, EEPROM; External Power Supply; Cable Options which include: Duo-Disk Cable, Serial Interface Cable, Parallel Interface Cable; Replacement Battery for Clock/Calendar.



*Compatibility -*The Kache Plus Card is compatible with Apple II, II+, IIe and IIe enhanced systems with 1-6 floppy disk drives, and supports DOS, PASCAL, ProDOS and CP/M. Moreover, it is 100% compatible with all software packages.

*Direct From The Developer-*The Kache Plus Card is available exclusively from Ohio Kache Systems (OKS) on a direct mail basis only. OKS offers a full year warranty on all components and labor as well as a 30 day trial period. A rigorous 48 hours of testing is completed on each unit prior to shipment. If the Kache Plus Card does not perform as we say it will, simply return it to OKS and your money will be fully refunded.

Don't Buy A Hard Disk Drive Or Another Add-On Board... Buy the Kache Plus Card instead. Priced at:

\$395⁰⁰ (Price indicated is for the standard Kache Plus Card. Optional features are available at an additional charge.)

The standard Kache Plus Card costs less than any hard disk drive. It's even priced below the cost of buying separate boards for each of the standard features.

For shocking speed **PLUS** expanded performance...Expose yourself to Ohio Kache Systems, and its latest product! For more information on the new Kache Plus Card call us toll free at...

1-800-338-0050
or write for our free brochure.

Available soon: The Data Kache Card for IBM and IBM compatible systems.



Ohio Kache Systems Corp.
4166 Little York Road
Dayton, Ohio 45414-2566
513-890-3913

© Ohio Kache Systems is a developer of computer enhancement products.

Ohio Kache System, OKS and Kache Plus Card are registered trademarks of Ohio Kache Systems, Inc.
Apple, Apple II+, IIe and IIe enhanced are registered trademarks of Apple Computers, Inc.

IBM is a registered trademark of International Business Machines, Inc.
Hitachi is a registered trademark of Hitachi, Inc.

The MPU-401 MIDI interface has a built-in metronome, which you control from the program. You can turn the metronome on or off for your recording sessions; it changes its beat whenever you change the tempo (20-240 beats per minute) from the main menu or from a tempo window prior to recording. I like the fact that while playing back your music, you can speed or slow the tempo just by turning the joystick or pressing the cursor keys. This way, you get a feel for what makes a good tempo without having to stop, return to the menu, and restart. It's all fluid.

A time-signature window lets you select from 15 signatures, ranging from 2/4 to 9/8 (the default setting is 4/4). You must select your signature, with all tracks empty, before recording; only one time signature can be used per song, a handicap for musicians trying to create multi-signed pieces.

With MUSE's auto-correct option, the program corrects any timing errors made during the initial recording of your music. If, in real time, you made a quarter note too long or an eighth too short, the program will make amends.

When it's time to hear your composition, MUSE's Play function lets you listen to the entire piece (all or selected tracks) or choose the auto-locate function, listening to a song or track starting from any measure. You can save your recordings and settings to disk, or load previously recorded songs.

If you have more than one MIDI instrument hooked up to your computer, or an instrument that can process several channels at once, MUSE offers a powerful function: channelization of tracks, letting you create a complete orchestral arrangement with several different instruments playing simultaneously. You can assign each of the eight tracks to any of 16 standard MIDI channels. For example, my CZ-101 can handle a different monophonic voice on each of its four channels, so I can create the effect of a four-piece band.

The Extras

The above features are just the beginning of MUSE's capabilities. MUSE can record information about aftertouch, created when you press a key down after it has initially been pressed, from the MIDI instrument. You can set MUSE to filter this feature out when recording. You can also

Continued on p. 142.

IT'S A TEXTWRITER

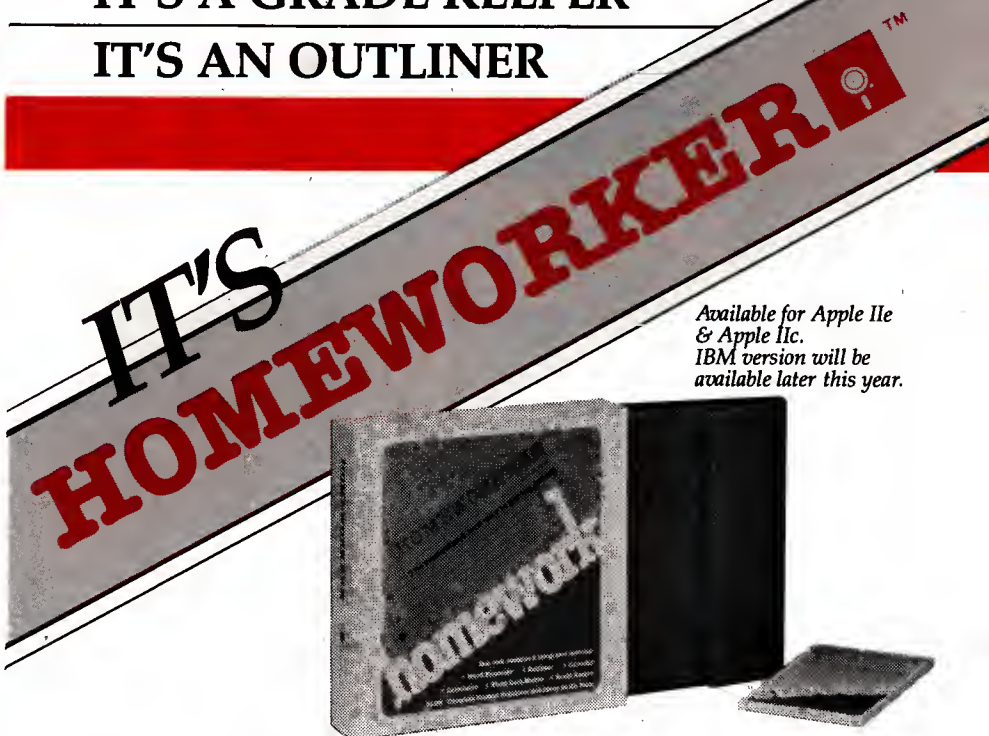
IT'S A CALCULATOR

IT'S A FLASH CARD MAKER

IT'S A CALENDAR

IT'S A GRADE KEEPER

IT'S AN OUTLINER



Homeworker from Davidson is an easy-to-use productivity program that helps students manage their coursework through six integrated modules: Textwriter, Outliner, Flash Card Maker, Calculator, Calendar and Grade Keeper.

The program also features on-screen tutorials, fact finder files and a clipboard for easy transfer of materials from one module to another.

The **Homeworker** software is packaged in a deluxe student organizer, along with a variety of study accessories:

- easy-to-follow instruction manual
- study skills book
- calendar section
- phone/address book
- nine separate subject tabs
- fact finder—a quick reference guide for students
- highlighter and felt tip pen
- metric ruler
- 8½" x 11" notepad
- disk holder

\$89⁹⁵

suggested retail price

Ask your dealer for this Davidson program or call us directly for assistance:

(800) 556-6141 (213) 534-4070
(Outside California) (California Only)

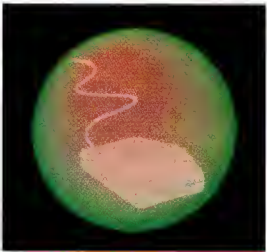
Davidson.
Educational software
that works

IC

Davidson & Associates, Inc., 3135 Kashiwa Street, Torrance, CA 90505
Please send me a **FREE COLOR BROCHURE** and the name of my nearest Davidson Dealer.
Name _____ Address _____ City _____ State _____ Zip _____
©1986 Davidson & Associates, Inc.

VISIONS OF GS SOFTWARE

by Paul Statt, *inCider* staff



Software for the Apple IIGS will come from a number of manufacturers, but, for the most part, the look will be familiar. Many of the new programs will look and act like Macintosh programs, but will come at you in living color. Upgraded Apple IIe and IIc software will also account for a large percentage of

IIGS software. In fact, of the six programs *inCider* viewed in July, only one could be classified as new—the rest do on the IIGS what desktop-publishing software, painting programs, drawing packages, and word processors do on the Macintosh. Come to think of it, Apple IIGS software sings the same old songs Apple II software sang. It just hums faster and performs in color.

Activision on the IIGS

Activision's *Writer's Choice Elite* and *PaintWorks Plus* were the only two programs *inCider* saw in July that were developed on the IIGS. They were written by Version Soft, the French company that developed International Solutions' *Mouse Calc* and *Mouse Desk*. Apple's sluggish delivery of small parts, like the C compiler, delayed other software publishers, but Version Soft showed true *esprit d'Apple II* and went ahead anyway.

If you're familiar with Macintosh programs, *Writer's Choice* will remind you of *MacWrite*. You can choose your own background color from a rainbow of 16 and type in either black or red. You can cross out mistakes or variants—a nice alternative to deleting text altogether—in black or white.

Like *MacWrite*, *Writer's Choice* puts your papers on display: Each document you create occupies one of 16 windows, only four of which can be open at a time. The size of the window is up to you. To scroll, you use a mouse to move a square box that looks like an elevator up and down the right-hand side of the screen.

You can transfer all or part of a document from one window to another. Since *Writer's Choice* and *PaintWorks* are integrated, you can also cut and paste pictures and words between the two programs.

Above your colorful desktop, *Writer's Choice* displays a Mac-like menu bar, with Apple, File, Edit, Find, Format, Font, Style, Color, and Window as your choices. In July's version not everything on the menu was in the kitchen: Not every command on every menu worked, but preparation was far enough along to get a taste of the final product.

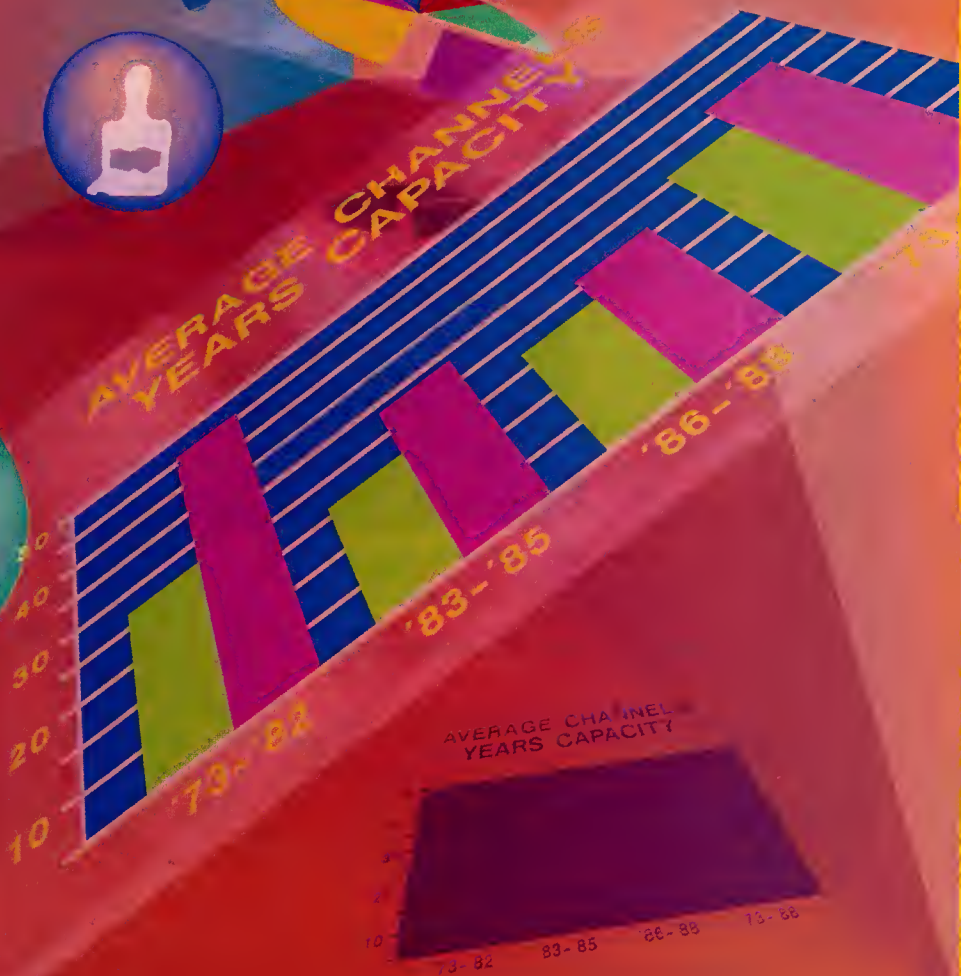
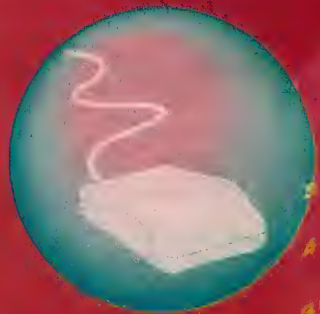
The Apple icon offers information and access to the IIGS Control Panel, as well as a puzzle. The File commands are the usual ones: Open a file, close a file, save a file, save a file as, and so forth. (File commands and Edit options are also available as "open-apple" commands.) Printing options are also listed on the File menu. Although details were incomplete in July, Activision promised that *Writer's Choice Elite* would support common printers and could print "more than words": That is, graphics imported from *PaintWorks Plus* could also appear on paper.

Edit offers choices like insert, delete, undo, and so on. Undo is unique in that you can reverse the previous erasure—undo your last undo, as it were—handy for those of us who have been known to make more than one mistake at a time.

The Find menu can search for and replace text. (You can also execute these commands from the keyboard.) At the Format and Font bars you can choose the typeface you prefer. Again, choices were not yet final in July, but Activision says *Writer's Choice Elite* will include every Mac font.

Typestyle, underlining, boldface, and the like will depend on the print capabilities Apple decides to finally build into the IIGS. Activision will support whatever Apple offers in firmware, but will surely offer color highlighting on screen. The Color menu is clear; you select hues for text and background. At the Window bar, you can choose new windows and lay them over each other.

What's new in Apple IIGS software? The IIGS' vibrant color adds a different dimension to old, familiar programs, while in others you'll find the innovation you've been looking for.



Are you prepared for tomorrow?

inCider knows that your world of computing is as ever-changing as the lifestyles of the '80s. What's "in" today may be "out" tomorrow. And if you're an Apple II* user, not being ready for tomorrow's changes and challenges can mean less productivity and efficiency.

That's why an *inCider* subscription can be the best investment you make for all your tomorrows. The "Apple II Journal" will keep you informed about every current event, as well as ideas that are still on the drawing board.

Yes. I want to be a well-informed Apple II user! Please send me 12 issues of *inCider* for \$24.97. I'll save 30% off the newsstand price.

☐ Payment enclosed ☐ Bill me

Name _____

Address _____

City _____ State _____ Zip _____

Canada and Mexico \$27.97, 1 year only, US funds drawn on US bank. Foreign surface \$44.97, 1 year only, US funds drawn on US bank. Foreign airmail, please inquire. Please allow 6-8 weeks for delivery.

***inCider*, P.O. Box 911, Farmingdale,
NY 11737 36NB5**

Stay On Top Of The Trends

And to know what's hot and what's not, you need to **Ask *inCider***—the popular monthly feature that answers your questions about the latest software and the newest programming ideas.

Hardware? In **Apple Clinic**, you'll learn what works best for other Apple users, plus you'll discover some very economical maintenance and repair hints.

Then, take a look at **Applesoft Adviser**. In no time, you'll become a natural with BASIC so that you can be a better and more creative programmer.

And that's just the beginning of what's in every *inCider* every month.

The Progressive "Apple II Journal"

inCider is today's Apple II magazine dedicated to meeting the challenges you'll face tomorrow. Even our new look sports a cleaner, more appealing design for easier reading and reference!

Subscribe now and you'll get 12 issues of *inCider* for just \$24.97—a **30% savings** off the cover price! To order, just return the coupon, or call **1-800-258-5473**. (In NH, call 1-924-9471.)

* Apple II is a registered trademark of Apple Computer, Inc.



inCider

Showing you the future that's taking shape today.

Fleet System 3TM

**Super Value
\$79.95!**

**Integrated Word Processing, Spell Checking
and Thesaurus**

John and Mary Customer
3 Fleet Lane
Productivity, USA

Dear John and Mary,

INTEGRATION is defined as "The act of bringing all parts together to make a better whole." Fleet System 3 has been carefully designed to bring you the most essential writing tools - Word Processing, Spell Checking and Thesaurus, all in one extremely powerful, wonderfully EASY TO USE integrated system.

Fleet System 3 provides you with every important word processing feature including Preview so "what you see is what you get," built-in Mail Merge for personalized letters, built-in Math Functions and much, much more.

In addition, Fleet System 3's integrated 90,000 Word Dictionary ensures that embarrassing misspellings are a thing of the past and gives your work a crisp, **professional** appearance. What's more, Fleet System 3's integrated Thesaurus provides you with tens of thousands of synonyms and helps students, writers, and business people to improve their reading, writing and vocabulary skills immediately!

Invest in the best Fleet System 3. The ultimate, integrated writing tool.

Sincerely,

The Staff of PSI

- **Powerful, Easy To Use Word Processing**

Helps you type, insert, delete and rearrange text. Perfect for book reports, term papers or full office use.

- **90,000 Word Dictionary**

Eliminates embarrassing misspellings, and can spell check a 10 page document in approximately 1 minute!

- **Integrated Thesaurus**

Provides thousands of synonyms and antonyms and helps improve your reading, writing and vocabulary skills immediately.

- #1 greatest, best, supreme, maximum
- #2 final, definitive, conclusive, end
- #3 peak, utmost, apex, extreme

Includes every important word processing feature, including Mail Merge and an Extra Text area—(a second 80 column screen) that works like a scratch pad for storing and merging information. Invest in the best. Fleet System 3... the VALUE PACKED integrated writing system. Required Hardware: Apple IIe or IIc with 128K • Disk Drive • Suitably interfaced printer.



CALL 1-800-343-4074 for the Dealer nearest you!

Over a quarter of a million programs in use worldwide since 1980

PSI, 51 Fremont Street, Needham, MA 02194 (617) 444-5224

Fleet System 3TM is a trademark of PSI—Fleet System 3TM was designed and written by Visiontronics, Ltd.—Apple is a trademark of Apple Computer Company. Some printers may not support certain Fleet System 3 functions and/or require an interface. Please check with your dealer. Dealer and Distributor inquiries are invited.

Circle 69 on Reader Service Card.

Activision's *PaintWorks Plus* lets you mix colors from three "rainbow" palettes to create any of 4096 hues, while your "paintbrush" cursor can vary in size, shape, and the number of dots it contains.



Writer's Choice Elite is fun to work with, but it's also productive: Those 16 windows mean a desktop big enough to hold all your words. And informal speed tests put Writer's Choice far ahead of any Mac word processor. Don't put any money on Writer's Choice in a race with Roger Wagner's MouseWrite on a 256K Apple IIe with accelerator card, though—MouseWrite would be in front by a nose.

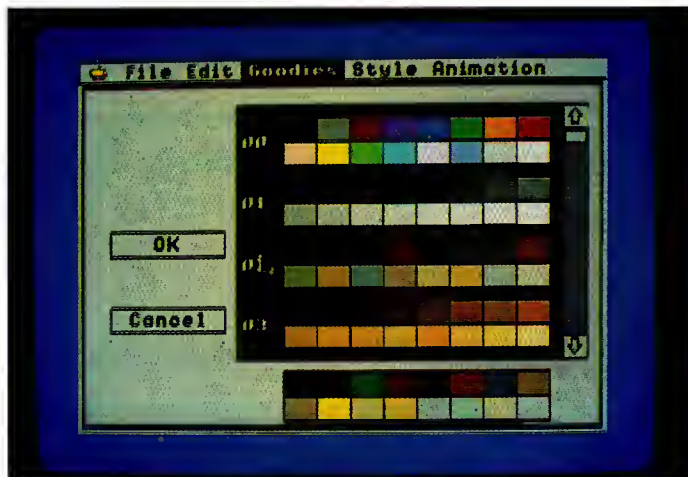
PaintWorks Plus: Fun and Educational

PaintWorks Plus is fun to use, too. It may not be as practical as Writer's Choice, but it's educational.

PaintWorks was modeled on MacPaint—the look is similar, but more colorful. At the bottom of the screen is your current palette, from which you draw the colors and patterns you want to paint. To the left is a pictorial menu of choices: draw, erase, paint, make boxes, circles and ovals, spray paint, and everything else you could do with MacPaint. You choose from an iconic menu that's Apple standard, if not altogether intuitive: For example, the lasso, which to many would suggest a roundup, actually selects part of the painting program.

The menu bar at the top shows Apple, File, Edit, Goodies, Color, Font, and Animation. Under the Apple icon are all the usual features: About PaintWorks, Help, and access to the Control Panel. The File Menu contains the usual commands, plus Revert, a command that substitutes the picture with which you started for the one you've drawn—useful if you've painted a moustache on your Mona Lisa and changed your mind.

When you Edit, you can Undo, Cut, Copy, Paste, Clear the screen, Invert the painting, Flip it horizontally or vertically, or Rotate it. (Remember that you can undo what you just undid.) Activision also promises that you can copy paintings into Writer's Choice documents.



Under the Goodies menu you can superimpose a Grid on your painting—PaintWorks works almost like a drawing program. Goodies also include FatBits, a "magnifying glass" that lets you look at your work close up and make changes in individual bits. You can "Show Page" and see the entire picture at once, without menu bars and palettes. You can change the shape and size of your "brush" and the number of dots it contains.

Another good goody is Edit Pattern. Mac painting programs, lacking color with which to work, made good with 16 patterns that look like bricks in a wall, or Navajo rugs. PaintWorks keeps these patterns and does them one better: You can create color patterns. They make good backgrounds, but artists will find more imaginative uses for them.

Your Color options are to Search for and Dispose of colors, and to play with your Palettes. The Search Color command finds every pixel of a given color in your picture and sets it flashing—not only a good way to preview possible changes, but an easy way to simulate animation, as well. Each palette contains a selection of 16 colors with which you can work at one time (4096 colors are available). As many as 128 palettes can be stored on disk.

The Edit Palette option is an educational tool for non-artists. Rather than paint with standard, "store-bought" colors, artists like to mix their own paints; in PaintWorks, you slide a "cursor" up and down a "rainbow" bar until you find the color you like. You work with three rainbows—red, green, and blue. You can add and remove colors to create any of the 4096 hues, letting you match colors perfectly. The yellows are the weakest colors in that mixing just the right shade is difficult.

Playing with the Palette Editor, you'll remember that the Apple IIgs is still digital. Those 4096 colors are about 64 times as many as most people can detect. Even a palette of whites, in which the difference between one shade and the next is only a shadow, is possible. The Palette Editor gives you a quick lesson in color theory—the way adding a bit of blue transforms yellow, for instance. It's fun, but don't call it educational—it might scare kids away.

The Font menu, like the Writer's Choice Font menu, was waiting in July for Apple to firm up its IIgs firmware. PaintWorks will support all the machine's fonts, which should number at least seven.



The only no-show at the PaintWorks performance in July was full animation. It produced animated sequences, but you couldn't create your own cartoon. The animation, though, is good—it moves at 16 frames per second, and hacker Walt Disneys can fill an entire disk with images if they like. Animation isn't easy on the Apple IIGs—it doesn't have the Amiga's "blitter" chip, which lets you move blocks of the screen without accessing the microprocessor; it doesn't have the Commodore 128's sprite graphics, or even page-flipping, like the old Apple II. But PaintWorks still handles animation beautifully.

Innovative Storytelling

Everyone's seen paint programs and word processors before, but LearningWays' Explore-a-Story is new and different.

Explore-a-Story is a small voice crying, "Innovation," in a monotone wilderness. Explore-a-Story tells a tale (it's billed as reading software for kids) in so radical a manner that most adults won't even notice they're experiencing the story in a whole new way. But kids will.

The stories are simple. "The Lima Bean Dream" and "The Bald-Headed Chicken" are good tales for young children: Colorful animals talk about problems kids understand, like feeling lonely or hating lima beans.

These stories are distinguished in the telling. First, the young reader gets a book. Already Explore-a-Story is ahead of the reading-software pack, because nobody has ever learned to read books by tickling a computer's keys, no more than by watching *Sesame Street* on television. The child holds a book in his or her hands—a book with lots of pictures, complete sentences, and a story.

The innovation is that each picture—about 14 per story, one for each scene—is also displayed on the computer. The computer picture is unlike the image in the book—and just like the one in the child's head. It's dynamic: You can move objects around; birds fly; frogs hop.

You can add flora and fauna to a scene, or print dialog on screen in balloons. You can print pictures—color or coloring-book-quality black-and-white—and coloring does more for hand-eye coordination than typing or wielding a joystick.

Explore-a-Story sounds simple. It's much simpler than,

In LearningWays' Explore-a-Story series, colorful characters talk about problems kids understand. There's a structure on which the child can hang a daydream, but there's room for imagination, too.



say, interactive fiction, in which you must crack a certain code, pick up a particular toy, or say "abracadabra" to survive into the next scene. In an Explore-a-Story, tomorrow always comes; what you do in the first scene doesn't affect the second.

Explore-a-Stories encourage reverie. In the words of their creators, they're "noncoercive." There's a story—a structure on which the child can hang his or her daydreams—but there's room for imagination at every turn.

The LearningWays user interface takes the Mac idea and goes a step beyond. Two boxes are on screen at all times. With the mouse, move the cursor to the upper right-hand corner and click to "flip pages." Clicking on the upper left-hand box brings the menu bar to the screen.

Menus are iconic. The animals menu, for instance, contains a picture of an animal, and the pull-down menu scrolls through a number of pictures of animals, not a list of their names. You don't have to hold down the pull-down menus, either. A child, who might find clicking and dragging a bit difficult, merely has to click on the menu, then bring that item into the picture.

Other menus list objects, including living things like trees, that you can add to a scene, but you can't animate them. The same goes for background landscapes; one possible landscape is empty, so the reader can start from scratch. The Text menu contains the names of all the objects and animals on screen that the child can drag into the picture. Disk (or File) and Print menus are more traditional.

LearningWays and book publisher D.C. Heath have 16 stories ready for the Apple IIGs, as well as eight science lessons and three Spanish-language stories that use the same routines. Although LearningWays didn't comment on its plans for future Explore-a-Stories, *inCider* felt this unique software would also be a great way to bring to life ancient tales, tales such as "Androcles and the Lion" and "Jason and the Argonauts" that preceded written language.

Broderbund's Newsmaker (below) lays out color text, graphics, and background. It's suitable for professional or beginning typesetters and designers. Electronic Arts' Deluxe Paint (right) takes advantage of the IIGS' 16 active colors.



In the Works

In July, Broderbund was developing a program called Drawing Table on a Macintosh. It will feature color on the IIGS. The Drawing Table is more like MacDraw than MacPaint in that you create scale drawings, plans, maps, and blueprints rather than paintings. In addition, the Drawing Table display looks like MacDraw's—menu bar at the top, cursor options to the side. The drawing surface is a grid.

The menu offers File, Edit, Style, Fonts, Kind, View, and Set, including the options you'd expect—file saving, various timesteps, printer options, and the like. The Kind menu lets you set line thickness, pattern, and color, and thickness and "roundedness" of corners. The Set menu offers rotation and inversion, and can also line up your drawing on the grid.

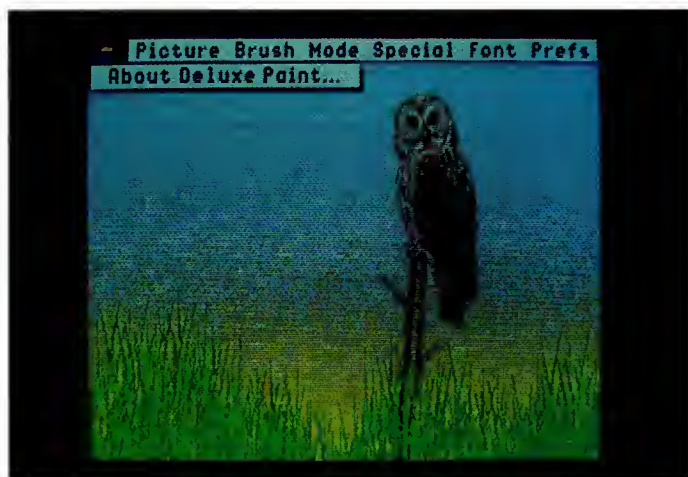
Drawing Table's Zoom feature lets you move in on a small part of your drawing for detailed viewing and editing. Creatively using Zoom, you can also produce drawings, plans, and blueprints much larger than your screen.

In addition to lines and boxes, Drawing Table contains built-in arcs, which simplify the "free-hand" drawing of complex objects.

Broderbund is also working on a desktop-publishing program called Newsmaker, which was running on a IIGS in July. Newsmaker has a small built-in word processor and can also receive text files from AppleWorks or Broderbund's Bank Street Writer. You can resize graphics images from other sources.

Newsmaker can lay out color text and color backgrounds, too, but Broderbund stresses that black-and-white support, including LaserWriter capability, is built in.

The menu bar offers Page, Text, Pen, Line, and Fill menus, as well as the usual File and Edit. Page lets you preview your page at various sizes—what you see is indeed what you get. You can turn a grid on or off; when it's on, your text and graphics are automatically aligned to the nearest eighth of an inch; when off, you can float



pieces freely on the page. You can wrap text around those floating pictures, too.

The rest of the menu choices weren't implemented in July, but a library of formats helps get beginners started. That's the strength of the program: It's helpful not only to professional typesetters and layout artists, but beginners, too.

Megahaus also promises desktop-publishing software. Its PageWorks program uses an interesting technique that keeps text in "cells," which work something like pages in a word processor or cells in a spreadsheet. You can move cells around in your layout, but when one cell is filled, the text moves into the next as in a word processor.

Electronic Arts has moved Deluxe Paint from the Amiga to the Apple IIGS. The only differences are that the IIGS has 16 active colors compared to the Amiga's 32, and that the Amiga has a blitter chip to ease animation. The IIGS Deluxe Paint will be slower, too.

Two other programs in the works for the Apple IIGS in July were Scholastic's Talking TextWriter, a speaking word processor that also runs on the old Apple II, and TML Systems' Pascal, an implementation of the programming language that promises the best of Mac Pascal and Apple II Instant Pascal in one package.

A Safe Investment

Rather than risk investing time and money in programs that work only on the Apple IIGS, a number of software developers have simply upgraded old Apple II programs: Rags to Riches (Chang Labs), Pinpoint (Pinpoint), CommWorks (PBI), Managing Your Money (MECA), Dollars & Sense (Monogram), MouseWrite (Roger Wagner Publishing), and VIP Professional (VIP Technologies). MouseWrite, a word processor, and VIP Professional, a spreadsheet program, have already used the "point and click" interface and mouse in their earlier Apple II lives—in fact, they're products that seem to have been waiting for the IIGS.

The story of Apple IIGS software has an ironic twist: The most interesting program available for the IIGS at this time is LearningWays' Explore-a-Story, which was released simultaneously for the good old 128K Apple IIe and IIc. As you'd expect, though, the IIGS version is faster, and the colors are prettier.

The moral is simple: Good hardware, even innovative hardware, won't give birth to good, new software overnight. Good software needs imaginative programmers who are willing to try something new, and raise a bright young program. ■

Preferred Computing

ORDER

TOLL FREE

1-800-327-7234

Computer Accessories

When Only the Best Will Do!



AE APPLIED ENGINEERING™

RamWorks III™ If you have a IIe this card is perfect and if you use AppleWorks, it's an absolute must! Applied Engineering was the first company to expand AppleWorks and they're always 6-12 months ahead of the competition. And you can stay current with our FREE SOFTWARE UP-GRADES. Why settle for a partial compatible when you can have a real RamWorks at a discount price.

RamWorks III 256K **\$169**
 RamWorks III 512K **\$209**
 RamWorks III 1 MEG **\$279**
 RamWorks III 1.5 MEG **\$389**

65C816 16 Bit Card Requires RamWorks II or III and Apple IIe. Enhances VIP Professional. **\$149**

RamWorks RGB Option Even if you bought a RamWorks just to use the RGB option, it would be worth it. The Applied Engineering RGB option has 4 text colors, runs both Apple and IBM RGB monitors, and is compatible with Apple's standard for RGB, includes cables. **\$99**

(See our new RGB monitor at right.)

TransWarp™ We tested all the accelerators and TransWarp was 20-300% faster than the others. Runs cool too! **\$219**

Z-80 Plus™ Runs all CP/M® software, works with Sider hard disk. There are over 5000 CP/M® programs out there and this card runs them all. Includes operating system and manual, a great value. **\$99**

Timemaster H.O.™ We tried them all, Clockworks, Thunderclock, and others. Timemaster H.O. had the most features and was the easiest to use. It comes with about 4 times the software of anyone else. It even adds 15 new commands to BASIC! **\$99**

Viewmaster 80™ Super resolution, total software compatibility and everything you need to run AppleWorks on a II+ or Franklin. **\$109**

RamFactor™ If you have a II+ or would rather use slots 1-7 in your IIe or IIgs, RamFactor is for you. It is fully compatible with Apple's memory card, runs AppleWorks on a IIe, II+ or IIgs and has a battery back-up option.

RamFactor 256K **\$189**
 RamFactor 512K **\$224**
 RamFactor 1 MEG **\$299**
 Battery Back-up **\$149**

Extended 80 Column Card with 64K Comes with full documentation. **\$69**

Z-RAM II™ Up to 1152K in a IIc? You bet! And only Z-RAM runs CP/M® software too! If you run AppleWorks on a IIc, this card is a must!

Z-RAM II 256K **\$249**
 Z-RAM II 512K **\$284**
 Z-RAM II 768K **\$319**
 Z-RAM II 1 MEG **\$389**

IIc System Clock™ A PRO-DOS compatible clock, displays time and date on AppleWorks screens and files, and other PRO-DOS programs. **\$69**

More Quality Products

The Sider A powerful yet compatible hard disk works with PRO-DOS, DOS 3.3, CP/M® and Pascal.

10 MEG Sider **\$599**
 20 MEG Sider **\$799**
 20 MEG Tape Back-up **\$639**

Ultra Hi Res RGB Monitor/TV Due to the very low price of the product, we can't reveal the manufacturer. But we can tell you that it is a very major manufacturer. This RGB monitor uses a 13" ultra hi res CRT for super sharp 80 column text and great graphics. But in addition to being the best RGB monitor available this unit is also a 180 channel cable ready television set with remote control. Try it. You WILL like it.

Only **\$519**

RGB Cable For above **\$29.00**

Mappler RGB Converter This device converts an Apple RGB output into an IBM output (15 pin to 9 pin). Not needed when using the new RamWorks RGB option. **\$49**

5-1/4" Disk Drive Super quiet direct drive compatible with all Apple software and Apple controller card. A top quality unit with 1 year warranty. **Only \$119**

5-1/4" Disk Controller Runs up to 2 drives. **\$49**

16K RAM Card For Apple II and II+ **\$69**

Heavy Duty Apple Power Supply With over twice the output current of Apple's original power supply. This unit can run even fully loaded Apples. **\$59**

DataShield Uninterruptable Power Supply Keeps your Apple running through power transients, voltage drops, brownouts and blackouts. Provides constant flow of power in a blackout for 15-20 minutes, allowing an orderly shutdown.

200 Watt Unit **\$329**

Kensington System Saver Fan with 2 power outlets and surge protector. **\$69**

Internal 1200 Baud Modem Cermetek 1200, for Apple IIe, II+ and IIgs runs at 1200 and 300 baud. Auto-dial, auto-answer with built-in speaker. Hayes compatible, Bell 212A and 103 compatible, tone or pulse dialing with built-in communications software and self test. Comes complete with cable and manual. A top quality unit with a three year warranty. **\$199**

Pinpoint's AppleWorks Accessories The best available and they are written to fully utilize Applied Engineering's RAM cards. (Includes RAM enhancement software). Together a \$118 value. **Only \$69**

256K RAMS 150ns. 5 year warranty. Set of 8 **\$39**

VIP Professional Lotus 1-2-3 Work-alike **\$169**

SPECIAL!

RamWorks™ That's right, RamWorks not RamWorks II. RamWorks is the memory card that started the revolution. RamWorks can expand to 512K on the main board and up to 1 meg with an optional 512K piggy-back and can accept Applied Engineering's new RGB option. A 512K RamWorks gives AppleWorks a 360K desktop. Comes with Applied Engineering's newest software. Hurry, at this price they won't last long.

With 512K **\$149**

Why buy from us?

1. Toll free 800 number for orders.
2. We almost always ship from OUR stock and we never let ourselves run out of Applied Engineering products. Call us before 3 P.M. and it ships today.
3. Emergency overnight delivery is available.
4. We're nice guys that want to help. We want our business to grow because of repeat customers and word of mouth.
5. We handle only the industry's best. We've tested and used all the products we sell.
6. 15 day money back satisfaction guarantee on hardware. If you don't like something, we'll give you your money back. No hassles.
7. We'll support, service and warranty everything we sell.
8. No surcharge is added for charge cards and we won't charge your card until we ship.
9. No sales tax is collected on orders outside Texas.
10. All shipments are insured by us.

Order by mail: Send check or money order to Preferred Computing, P.O. Box 815828, Dallas, TX 75381

Order by phone: 1-800-327-7234 Visa, MasterCard or COD Texas, Hawaii and Alaska 1-214-484-5464

Orders only call 1-800-327-7234

Questions and Customer Service call 1-214-484-5464 Texas residents add 5% sales tax

Prices subject to change without notice

The IIGS Hardware Report

While the software for the Apple IIGS hasn't yet reached its creative potential, certain developments in hardware may provide tools programmers need to break new ground.

The big news in IIGS hardware is in graphics and sound. AST Research (2121 Alton Avenue, Irvine, CA 92714, 714-863-1333) has added a frame grabber called VisionPlus (\$249, including hardware and software) to its HD-2000 line of hard disks and SprintDisk memory-expansion cards for the Apple IIGS. VisionPlus is a tool that digitizes any standard NTSC video input, then lets you manipulate the image with your drawing program—much as you'd copy typewritten text into your word processor with an optical character reader.

It's a popular peripheral for the Commodore Amiga, but the Apple IIGS model, which AST says will be available beginning the first quarter of 1987, should take video image processing out of artists' ateliers and into the schools. The benefit of frame grabbing for education is limited only by the value of the video: Imagine making multiple copies of maps and charts from a TV science special simply by using your color printer.

PBI Software and MDIdeas (1111 Triton Drive, Suite 101, Foster City, CA 94404, 415-349-8765) promise a IIGS audio digitizer called SuperSonic, as well as attendant music software. The product should feature true stereo sound and sport an amplifier cord you attach to your hi-fi. It uses its own Ensoniq sound chip, just like the one in the IIGS, and creates as many as eight wave forms in two channels; the software lets you compose your own music. At \$100 for hardware and software, this system is a low-cost synthesizer.

New RAM-expansion boards will also be available from numerous manufacturers. Even Applied Engineering (P.O. Box 798, Carrollton, TX 75006, 214-241-6060), the company that brought a rival "standard" for memory expansion to the Apple IIe—one that became more popular than the Apple protocol—has an Apple-compatible memory-expansion board for the IIGS. PBI will market its own memory-expansion card, OctoRAM, with up to 8 megabytes, along with a IIGS power supply/power conditioner.

There are some brand-new ideas as well on the RAM-card horizon. In addition to offering a IIGS ProGrappler, which supplies a parallel interface, Orange Micro (1400 North Lakeview Avenue, Anaheim, CA 92807, 714-779-2772) will present a product called RAMPack, a 512K memory-expansion board with *dynamic memory allocation*. You'll be able to use all that extra memory for more than one application at a time. The standard 512K RAMPack costs \$295; a 4-megabyte version is priced at \$465.

Other memory-expansion folks are waiting for the price of 1-megabyte RAM chips to come down before attacking that market—a 4-megabyte board using 256K chips is pretty cluttered. Some manufacturers are leaving room on their current expansion boards to plug in the new megachips—so look for those holes when you buy a board. □

—P.S.

Product Information

CommWorks

PBI Software
1111 Triton Drive
Suite 201
Foster City, CA 94404
(415) 349-8765
\$95

Reader Service Number 310

Deluxe Paint

Electronic Arts
1820 Gateway Drive
San Mateo, CA 94404
(415) 571-7171

Reader Service Number 311

Dollars & Sense

Monogram
8295 South La Cienega
Boulevard
Inglewood, CA 90301
(213) 215-0355
\$100

Reader Service Number 312

Drawing Table, \$89.95

NewsMaker, \$89.95
Broderbund
17 Paul Drive
San Rafael, CA 94903
(415) 479-1700

Reader Service Number 313

Explore-a-Story

D.C. Heath
Collamore Educational
Publishing
125 Spring Street
Lexington, MA 02173
(617) 860-1421
\$66

Reader Service Number 314

Managing Your Money

MECA
285 Riverside Avenue
Westport, CT 06880
(203) 222-1000

Reader Service Number 315

MouseWrite

Roger Wagner Publishing
10761 Woodside Avenue
Suite E
Santee, CA 92071
(619) 562-3221
\$149.95

Reader Service Number 316

PageWorks

Megahaus
5703 Oberlin Drive
San Diego, CA 92121
(619) 450-1230

Reader Service Number 317

PaintWorks Plus Writer's Choice Elite

Activision
P.O. Box 7286
Mountain View, CA 94039
(415) 960-0410

Reader Service Number 318

Pinpoint

Pinpoint Publishing
5901 Christie Avenue
Suite 501
Emeryville, CA 94608
(415) 654-3050
\$89

Reader Service Number 319

Rags to Riches

Chang Labs
5300 Stevens Creek
Boulevard
San Jose, CA 95129
(408) 246-8020
\$199.95

Reader Service Number 320

Talking TextWriter

Scholastic Software
730 Broadway
New York, NY 10003
(800) 325-6149
(800) 392-2179 (MO)
\$249.95

Reader Service Number 321

TML Pascal Compiler

TML Systems
4241 Baymeadows Road
Suite 23
Jacksonville, FL 32217
(904) 636-8592

Reader Service Number 322

VIP Professional

ISD Marketing/VIP
20 Steelcase Road West
Unit 12
Markham, Ontario
Canada L3R 1B2
(416) 479-1880
\$299.95

Reader Service Number 323

F-15 STRIKE EAGLE

For Fighter Pilots—*Not* Sightseers

Enjoyed by
over **200,000**
satisfied computer
fighter pilots!



THE FIRST. THE BEST.
THE ONLY REAL COMBAT FLIGHT SIMULATOR.



MAJOR BILL
OVER
3000 FLYING HOURS

F-15 STRIKE EAGLE is the most realistic, accurate and fun combat flying simulation available. Others have tried to copy it. But none of them have ever strapped on a fighter to experience the thrill and excitement of real combat fighter missions like our Major Bill* has. Compare F-15 STRIKE EAGLE versus our famous competitors, better known for their fancy hangar graphics. If you want a **slow sightseeing hangar queen, buy theirs!** If you want a product that has had over 50 outstanding reviews, thrilled over two hundred thousand satisfied computer fighter pilots, and gives you **real** fighter pilot action, then you want F-15 STRIKE EAGLE!

COMPARE —

COMPARE	F-15 STRIKE EAGLE	IMITATION GAME
SPEED	4 TIMES FASTER	SLOW AND UNRESPONSIVE**
COMBAT AREA	7 REAL MISSIONS—LIBYA TO THE PERSIAN GULF	2 SMALL FICTITIOUS FLYING AREAS
COCKPIT	SOPHISTICATED NAVIGATION MAP, MULTIPLE RADAR AND WEAPONS DISPLAY	TWO LINES OF TEXT
ACTION	MULTIPLE MISSION OBJECTIVES AND THREATS	PICK ONE MISSION OR ONE SET OF THREATS
VALUE	GREAT VALUE—(HUNDREDS OF HOURS OF PLAY/TIME)	OVERPRICED

**C-64 COMPARISON

F-15 STRIKE EAGLE is for Commodore 64/128, Atari 800/XE/XL series, Apple II+ family, IBM PC and PC JR computers for a suggested retail price of only \$34.95. Call or write for more information or Money Order, MC/Visa orders. Add \$2.50 for shipping and handling.

Registered trademarks of Commodore Business Machines, Inc., Atari, Inc., Apple Computer Inc., and International Business Machines, Inc., respectively.

*Major Bill Stealey, USAF Reserve, President, MicroProse

Circle 206 on Reader Service Card.

MICRO PROSE

SIMULATION • SOFTWARE

120 Lakefront Drive • Hunt Valley, MD 21030

(301) 667-1151

ONLY \$499
Now Available for the Apple IIcs!



SIDER MAKES A GREAT APPLE PERFECT

First Class Peripherals introduces the first external 10-megabyte hard disk drive that is fully compatible with your Apple IIcs, II+ or IIe.

Sider is the Core of Your Apple's Production

Our Special Second Anniversary offer of \$499 is the affordable solution you've been waiting for. Operating your Apple® IIcs, II+ or IIe can become cumbersome when you have to continuously shuffle and store floppies. First Class Peripherals has a solution to the "floppy shuffle"... the Sider.

Sider, a 10-megabyte subsystem, is an economic business tool that allows you to save time and money with a bootable hard disk that is reliable, fast and affordable.

The field-proven Sider was introduced in 1984. First Class Peripherals worked closely with Xebec to produce a quality hard disk that works with all major operating systems—DOS®, ProDOS®, CP/M® and Pascal®—and is interactive from one system to another. The Sider's hard disk has an access rate many times faster than that of a floppy disk, and the

storage on the 10-megabyte hard disk drive is equivalent to 72 floppy disks... and that's a lot of floppies to shuffle.

The Sider offers expandability. Its hard disk drive is partitionable, allowing you to allocate up to four operating systems on the same disk. And you can daisy-chain any two Sider products for a maximum of 40-megabytes of storage.

No Matter How You Slice It... It's a Sweet Deal.

You may ask yourself how First Class Peripherals can offer a 10-megabyte drive for only \$499. The answer is simple. This second anniversary price is possible through innovative technology, high capacity on-shore manufacturing and factory direct sales methods. By selling through direct mail, dealer and distribution expenses are avoided, so you pay only for the product and its components... nothing more.

In addition to its great price, the Sider also comes with Siderware—installation and support utilities, host adapter card, all necessary cables and a reassuring 15 day money-back guarantee. Simply order the Sider and use it for 15 days. If you're not completely satisfied, return it for a full refund. If you choose to keep the unit (we're sure you'll love it), you also receive First Class Peripherals' one year limited warranty.

So Make Your Apple Perfect and Order a Sider Today!

To receive your 10-megabyte Sider for only \$499, your 20-megabyte Sider II for \$799 or your B-Sider tape drive for \$695, simply order using the coupon below, or for faster service order by phone and charge to your VISA, MasterCard or American Express. **Call Toll Free: 1-800-538-1307, Extension 23.**



- ☐ **Yes,** please send me the items indicated:
- ☐ 10-Megabyte Sider @ \$499
 - ☐ 20-Megabyte Sider II @ \$799
 - ☐ B-Sider (tape drive) @ \$695

Please add \$15.00 for shipping and handling. Residents of CA and Nevada please add appropriate sales tax. Allow 4 to 6 weeks for delivery. Offer ends Dec. 31, 1986. Apple and ProDOS are trademarks of Apple Computer, Inc. CPM is a trademark of Digital Research, Inc.

I prefer to pay by:

- ☐ Check or money order enclosed (payable to First Class Peripherals)
 - ☐ VISA ☐ MasterCard ☐ American Express
- Card # _____ Exp. Date: _____
 Signature: _____
 Name: _____
 Address: _____
 City: _____ State: _____ Zip: _____
 Telephone: (_____) _____



Mail to: **First Class Peripherals,**
3579 Highway 50 East,
Carson City, NV 89701

D

Tokyo for \$19.95

東京

In the continuing evolution of scenery, SubLOGIC introduces the Japan and San Francisco Bay Area Scenery Disks for Flight Simulator II and Jet.

- Tokyo to Osaka is a comfortable 240-mile flight. The natural beauty of the Japanese coastline and mountain ranges complement the standard cross-country details.
- The beautiful San Francisco Bay Area "Star" Scenery Disk is perfect for concentrated sight-seeing.
- For the cross-country adventurer, our standard Western U.S. scenery (Disks 1-6) contains major airports, nav-aids, cities, highways, rivers, lakes, and mountains.

SubLOGIC Scenery Disks are available individually for \$19.95. The six-disk Western U.S. set is available for \$99.95. See your dealer, or write or call SubLOGIC for more information.

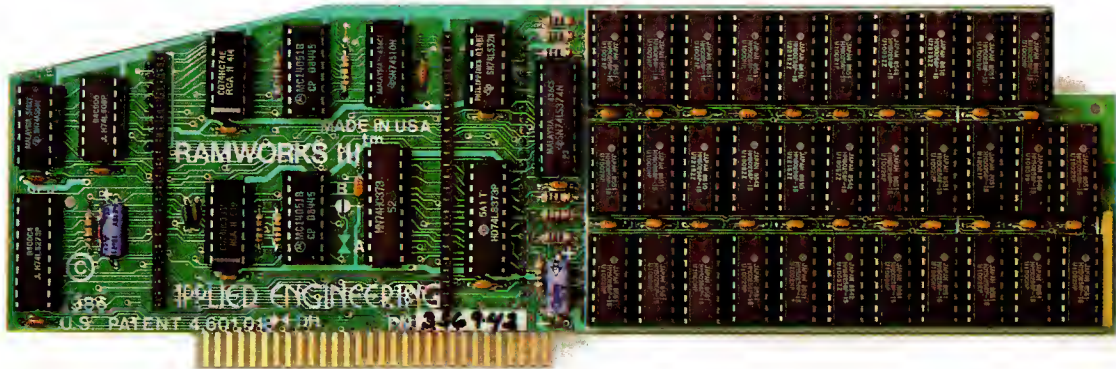
subLOGIC
Corporation
713 Edgebrook Drive
Champaign IL 61820
(217) 359-8482 Telex: 206995

Order Line: (800) 637-4983
(except in Illinois, Alaska, and Hawaii)



RamWorks® III

Patented Performance from the Recognized Leader



With battery backed RAM port, RGB port, increased memory capacity, full software compatibility and more compact design, RamWorks III is a generation ahead.

RamWorks III is the newest 3rd generation RAM card for the Apple IIe. It incorporates all of the technology and improvements that years of experience and over a hundred thousand sales have given us. By selling more memory cards than anyone else and listening to our customers, we were able to design a memory card that has the ultimate in performance, quality, compatibility and ease of use. A design so advanced it's patented. We call it RamWorks III, you'll call it awesome!

The AppleWorks Amplifier.

While RamWorks III is recognized by all memory intensive programs, NO other expansion card comes close to offering the multitude of enhancements to AppleWorks that RamWorks III does. Naturally, you'd expect RamWorks III to expand the available desktop, after all Applied Engineering was a year ahead of everyone else *including Apple* in offering more than 55K, and we still provide the largest AppleWorks desktops available. But a larger desktop is just part of the story. Look at all the AppleWorks enhancements that even Apple's own card does not provide and *only* RamWorks III does. With a 256K or larger RamWorks III, *all* of AppleWorks (including printer routines) will automatically load itself into RAM dramatically increasing speed by eliminating the time required to access the program disk drive. Switch from word processing to spreadsheet to database at the speed of light with no wear on disk drives.

Only RamWorks eliminates AppleWorks' internal memory limits, increasing the maximum number of records available from 1,350 to over 25,000. *Only* RamWorks increases the number of lines permitted in the word processing mode from 2,250 to over 15,000. And *only* RamWorks offers a built-in printer buffer, so you won't have to wait for your printer to stop before returning to AppleWorks. RamWorks even expands the clipboard. And auto segments large files so they can be saved on two or more disks. You can even have Pinpoint or MacroWorks and your favorite spelling checker in RAM for instant response.

RamWorks, *nothing* comes close to enhancing AppleWorks so much.

The Most Friendly, Most Compatible Card Available.

Using RamWorks III couldn't be easier because it's compatible with more off-the-shelf software than any other RAM card. Popular programs like AppleWorks, Pinpoint, Catalyst, MouseDesk, HowardSoft, FlashCalc, Pro-File, Managing Your Money, SuperCalc 3a, and MagiCalc to name a few (and *all* hardware add on's like ProFile and Sider hard disks). RamWorks is even compatible with software written for Apple cards. But unlike other cards, RamWorks plugs into the IIe auxiliary slot providing our super sharp 80 column text (U.S. Patent #4601081) in a completely integrated system while leaving expansion slots 1 through 7 available for other peripheral cards.

RamWorks III is compatible with all

Apple IIe's, enhanced, unenhanced, American or European versions.

Highest Memory Expansion.

Applied Engineering has always offered the largest memory for the IIe and RamWorks III continues that tradition by expanding to 1 full MEG on the main card using standard RAMs, more than most will ever need (1 meg is about 500 pages of text)...but if you do ever need more than 1 MEG, RamWorks III has the widest selection of expander cards available. Additional 512K, 2 MEG, or 16 MEG cards just snap directly onto RamWorks III by plugging into the industry's only low profile (no slot 1 interference) fully decoded memory expansion connector. You can also choose non-volatile, power independent expanders allowing permanent storage for up to 20 years.

It Even Corrects Mistakes.

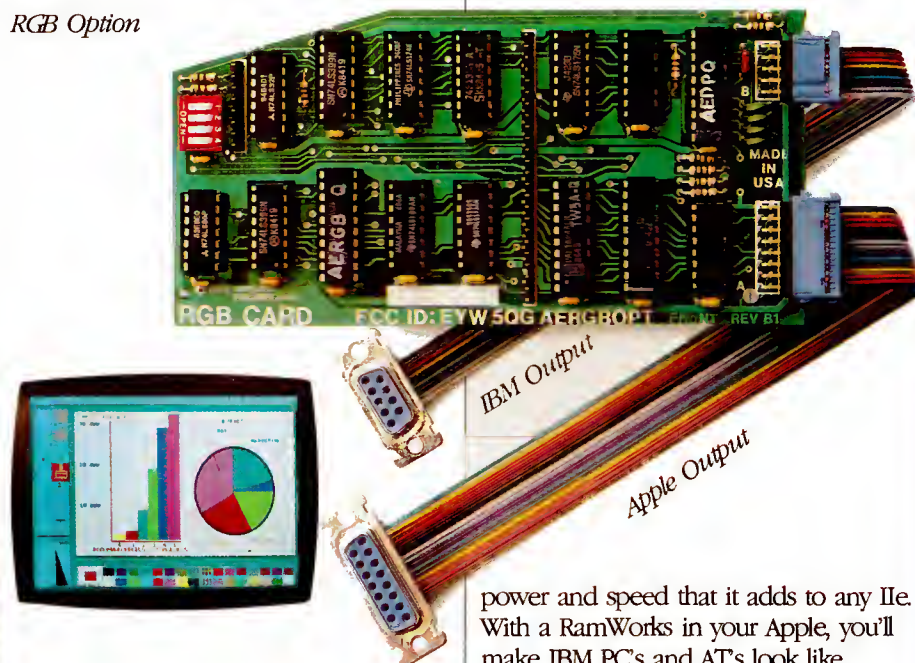
If you've got some other RAM card that's not being recognized by your programs, and you want RamWorks III, you're in luck. Because all you have to do is plug the memory chips from your current card into the expansion sockets on RamWorks to recapture most of your investment!

The Ultimate in RGB Color.

RGB color is an option on RamWorks and with good reason. Some others combine RGB color output with their memory cards, but that's unfair for those who don't need RGB *and* for those that do. Because if you don't need RGB

Applied Engineering doesn't make you buy it, but if you want RGB output you're in for a nice surprise because the RamWorks RGB option offers better color graphics plus a more readable 80 column text (that blows away any composite color monitor). For only \$129 it can be added to RamWorks giving you a razor sharp, vivid brilliance that most claim is the best they have ever seen. You'll also appreciate the multiple text colors (others only have green) that come standard. But the RamWorks RGB option is more than just the ultimate in color output because unlike others, it's fully compatible with all the Apple standards for RGB output control, making it more compatible with off-the-shelf software. With its FCC certified design, you can use almost any RGB monitor because only the new RamWorks RGB option provides both Apple standard and IBM standard RGB outputs (cables included). The RGB option plugs into the back of RamWorks with no slot 1 inter-

RGB Option



ference and remember you can order the RGB option with your RamWorks or add it on at a later date.

True 65C816 16 Bit Power.

RamWorks III has a built-in 65C816 CPU port for direct connection to our optional 65C816 card. The only one capable of linearly addressing more than 1 meg of memory for power applications like running the Lotus 1-2-3™ compatible program, VIP Professional. Our 65C816 card does not use another slot but replaces the 65C02 yet maintains full 8 bit compatibility.

Endorsed by the Experts.

A+ magazine said "Applied Engineering's RamWorks is a boon to those who must use large files with AppleWorks...I like the product so much that I am buying one for my own system." inCider magazine said "RamWorks is the most



"I wanted a memory card for my Apple that was fast, easy to use, and very compatible; so I bought RamWorks"

Steve Wozniak, the creator of Apple Computer

powerful auxiliary slot memory card available for your IIe, and I rate it four stars...For my money, Applied Engineering's RamWorks is king of the hill"

Apple experts everywhere are impressed by RamWorks's expandability, versatility, ease of use, and the sheer

power and speed that it adds to any IIe. With a RamWorks in your Apple, you'll make IBM PC's and AT's look like slowpokes.

Quality and Support of the Industry Leader

RamWorks III is from Applied Engineering, the largest, most well supported manufacturer of Apple peripherals and the inventor of large RAM cards for the Apple. With our 5 year no hassle warranty and outstanding technical support, you're assured of the most trouble free product you can buy.

It's Got It All

- 15 day money back guarantee
- 5 year hassle free warranty

- Built-in super sharp 80 column display, (U.S. Patent #4601081)
- Expandable to 1 MEG on main card
- Expandable to 16 meg with expander cards, with NO slot 1 interference
- Can use 64K or 256K RAMs
- Powerful linear addressing 16 bit coprocessor port
- Automatic AppleWorks expansion up to 3017K desktop
- Accelerates AppleWorks
- Built-in AppleWorks printer buffer
- The only large RAM card that's 100% compatible with all IIe software
- RamDrive™ the ultimate disk emulation software included free
- Memory is easily partitioned allowing many programs in memory at once
- Compatible, RGB option featuring ultra high resolution color graphics and multiple text colors, with cables for both Apple and IBM type monitors
- Built-in self diagnostics software
- Lowest power consumption (U.S. Patent #4601081)
- Takes only one slot (auxiliary) even when fully expanded
- Socketed and user upgradeable
- Software industry standard
- Advanced Computer Aided Design
- Used by Apple Computer, Steve Wozniak and virtually all software companies
- Displays date and time on the AppleWorks screen with any PRO-DOS compatible clock
- Much, much more!

RamWorks III with 64K	\$179
RamWorks III with 256K	\$219
RamWorks III with 512K	\$269
RamWorks III with 1 MEG	\$369
RamWorks III with 1.5 MEG	\$539
RamWorks III with 2 to 16 MEG	CALL
65C816 16 Bit Card	\$159
RGB Option	\$129
Optional Software:	
Pinpoint with RAM	
Enhancement Software	\$79
VIP Professional	\$219

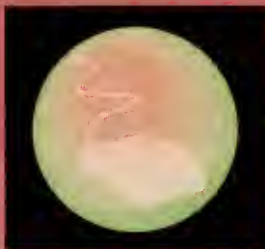
RamWorks III. The industry standard for memory expansion of the Apple IIe. ORDER YOUR RamWorks III TODAY. See your dealer or call (214) 241-6060, 9 a.m. to 11 p.m., 7 days, or send check or money order to Applied Engineering.

MasterCard, Visa and C.O.D. welcome. Texas residents add 5½% sales tax. Add \$10.00 if outside U.S.A.

AE Applied Engineering™
P.O. Box 798, Carrollton, TX 75006
(214) 241-6060

EXPLORING THE WORLD OF C

by Robert M. Ryan



Sure, the Apple IIGs has great graphics and sound, lots of memory, and a high degree of compatibility with current Apple II's. So what's new in the GS for programmers? If you're a programmer, the most important thing about the latest Apple II is that at first you'll know very little about how it works. The IIGs is an unexplored continent, waiting for you to unearth its secrets. In other words, the IIGs is a great machine to hack. And if you're going to hack the GS, you'd better learn C.

Without a lot of fanfare, C has become the language of choice among professional personal-computer programmers. Even Apple Computer, long a champion of Pascal, has bowed to the inevitable: The company has designated C the "official" language of the IIGs, and is readying a C compiler for the machine. If you're an Apple II programmer, you're probably not familiar with this language—C doesn't fit comfortably into 8-bit machines. The 16-bit IIGs, though, is made to take advantage of C's power and speed. In this article, I'll give you an overview of C—a starting point for your explorations of C and the IIGs.

Roots in UNIX Development

C hatched from the creative mind of one man—Dennis Ritchie—working at AT&T's Bell Laboratories in the early 1970's. C was designed as a systems language, not a general-purpose programming language. Ritchie wanted a language that would let him and his associates develop systems software—compilers and utilities—for UNIX, the operating system then under development at Bell Labs. Ritchie was so successful that eventually most of UNIX was written in C, as well.

When Bell Labs began licensing UNIX to universities in the mid-1970's, C was part of the package. By the end of the decade, C was showing up in a number of commercial installations. From there it was inevitable that C, like other languages, would be transported into the burgeoning microcomputer world. What no one foresaw was that C and microcomputers make a nearly perfect match.

*C and your IIGS:
This powerful yet
compact programming
language can help you get
the most from Apple's sophisti-
cated new machine.*



Compact Code and External Libraries

C straddles the line between high-level languages, such as BASIC and Pascal, and low-level ones, such as assembler. Like a high-level language, it insulates you from the hardware: You don't have to know the architecture of the machine to program in C. On the other side of the coin, C also lets you manipulate your data down to the bit level. This feature makes it a great favorite of systems programmers: They can do bit-level manipulations without having to know the hardware.

C is a very small language—it uses less than three dozen keywords, and doesn't even have a print statement. All input and output, as well as math functions and any machine-dependent functions, are handled by calls to external libraries. Some of these libraries, such as the standard input-output library, contain the same routines and have the same syntax regardless of the type of machine with which they work, thus ensuring that C programs are quite portable. Other libraries, such as graphics libraries, differ from machine to machine.

This dependence on external libraries illustrates one of C's important features: It's a modular language, letting you build large programs out of small pieces. C also has a wide array of data types, operators, and control structures. In addition, C lets you combine basic data types to build your own data structures. Since one of these basic data types is the pointer, complex structures such as linked lists are easily implemented in C.

C compilers are native-code compilers. Their output is the machine code of the target machine, not an intermediate code like that of the Apple Pascal compiler. Because the core of the language is so small and programmers can get right down to the bit level, C programs are usually small and fast. C probably produces the fastest, most compact code this side of assembly language, yet it's nearly as easy to use as other high-level languages. This makes it very attractive to anyone who wants to get the most out of his or her computer.

Program listing. This sample C program prints "The IIGS is great!" 100 times on your screen. Comments are included between asterisk/slash marks.

```
main( )                                /*Every C program needs
                                        one main module. The
                                        empty parenthesis
                                        opens the standard
                                        input and output
                                        streams and the
                                        standard run-time
                                        library.*/

{                                       /*Braces set off modules.*/

    int i = 100, n = 1;                /*All C variables must be
                                        declared. In this case,
                                        both i and n are integers.
                                        They are also assigned
                                        initial values.*/

    while (n <= i)                     /*Conditions for loop
                                        exit.*/

    {                                   /*Sets off while block.*/

        print f ("The IIGS is great!\n");

                                        /*Function call to standard
                                        print function. Prints text
                                        to standard output device
                                        (monitor) and sends a new-
                                        line character (LF+CR).*/

        n++;                           /*Increments counter.*/

    }                                   /*End while block.*/

}                                       /*End of main program.*/
```

C Operators

Arithmetic

+	addition
-	subtraction or negation
*	multiplication
/	division
%	modulus

Logical

&&	AND
	OR
!	NOT

Assignment

++	increment
--	decrement
=	simple assignment (can be combined with any arithmetic or bit-level operator to form compound assignment operators)

Relational

<	less than
<=	less than or equal to
>	greater than
>=	greater than or equal to
==	equal to
!=	not equal to

Bit operators

~	one's complement
&	AND
^	XOR
	OR
<<	left shift
>>	right shift

Pointers, structures, miscellaneous

&	address of
*	indirection (complement of address of)
sizeof	size in bytes
.	member of structure
->	member of structure
cast	forced type conversion
?:	conditional

EVERY TIME I TRIED TO PRINT A SPREADSHEET IT RAN RIGHT OFF THE

"Then I got new Sideways for the Apple II"

Now, you too can keep wide spreadsheets from meeting an untimely end at the edge of the printer paper. Use new Sideways® for the Apple II.™

Sideways turns your text on its side as it prints. So no matter how many columns you add to your spreadsheet, they'll all come back out in a single, continuous printout.

For top quality printouts without staples, glue or tape, Sideways has always been the way to go. And our latest version has even wider appeal.

Sideways works wonders with AppleWorks

Broadly speaking, new Sideways is the perfect printing companion to the world's most widely used Apple II spreadsheet program. That's because it looks, acts and feels like a natural extension of AppleWorks™ itself.

Sideways reads AppleWorks spreadsheet files directly. It even displays your spreadsheet right on the screen, and lets you use familiar AppleWorks-style menus and Open-Apple commands

to mark off a range and print. It's fast, easy, and looks great.

Give a new twist to all your printouts

With new Sideways, the printing possibilities are nearly endless. Choose from six different type sizes — from tiny to extra-large. Select single or double density printing. Adjust margins, page size, line spacing and character spacing any way you like.

And it works with every spreadsheet and word processor we can think of, whether it runs with ProDOS® or DOS 3.3. Just flip open the manual to find step by step instructions for using Sideways with an extensive number of popular programs. Including VisiCalc®, MultiPlan®, PFS® Plan and Report, AppleWriter II and more.

So why go on living with such a narrow view of your spreadsheets? When for \$69.95 you can discover the wide, wide world of printing with Sideways. See it all at a dealer near you. Or order directly from Funk Software with your check, Visa or MasterCard.



To order call 1-800-822-3865 (617-497-6339 in MA)

© 1986 Funk Software, Inc., 222 Third Street, Cambridge, MA 02142
Sideways is a registered trademark of Funk Software.

Announcing an Exciting Newsletter Exclusively for AppleWorks Users!

Now *all* the applications... *all* the solutions... *all* the tricks and techniques of the most popular Apple II program are yours *every month* in **The Main Menu**.

Here in 8 to 12 pages of articles and features every month, you'll get the concentrated know-how to unleash all the power and promise that AppleWorks has to offer.

• **Use It!** Want to use your spreadsheet as an electronic checkbook? ... create a mailing list with your word processor? Those are just two examples of the many ways this hands-on tutorial will give you *real* solutions to *real* problems and "real world" applications, month after month!

• **Link Up.** Here's where you learn how to use different software and peripherals with AppleWorks. Discover how to use a mouse, plug in a modem, add extra memory or attach a different printer. Shift into a 3½" disk drive... or link your AppleWorks with software enhancements like Pinpoint, MegaWorks and others.

• **Focus on Function.** Want to cut and paste between applications? It's easy... when you know how it happens. Whatever AppleWorks functions you want to know more about, you'll find them all covered in depth right here in The Main Menu.

• **Answers.** And just in case your particular problem doesn't pop up right away, write away for answers to your special technical questions. You'll learn lots from others' questions, too.

• **PLUS!** Inside info on New Products, often before they're released... Heard Here First is an advance look at news, trends, gossip and more affecting AppleWorks or any compatible products... Reviews of major AppleWorks compatible software, books and other resources. And Favorites might be worth the Charter subscription price all by itself, with a quick-reading technical trick or special function that could make it happen for your home or business computing needs.

DON'T MISS EVEN ONE VALUE-PACKED ISSUE!

So much is happening in the fast moving world of AppleWorks, you won't want to miss a single, savvy issue of The Main Menu—and you don't have to! Just complete the coupon or order card and mail today. You'll hit the ground running with the very first issue of The Main Menu, and you'll save 50% off the regular subscription price with a special Charter rate of just \$49.97. Two good reasons to ACT NOW and get the power—and the promise—of AppleWorks working for you!

For immediate service, CALL TOLL FREE 1-800-258-5473 (In NH, dial 924-9471).

AppleWorks & Apple II are registered trademarks of Apple Computer, Inc.

YES! Send me 12 issues of The Main Menu for the low subscription price of \$49.97. I'll save 50% off the regular rate.

☐ Payment enclosed ☐ Bill me

(print) Name _____

Address _____

City _____

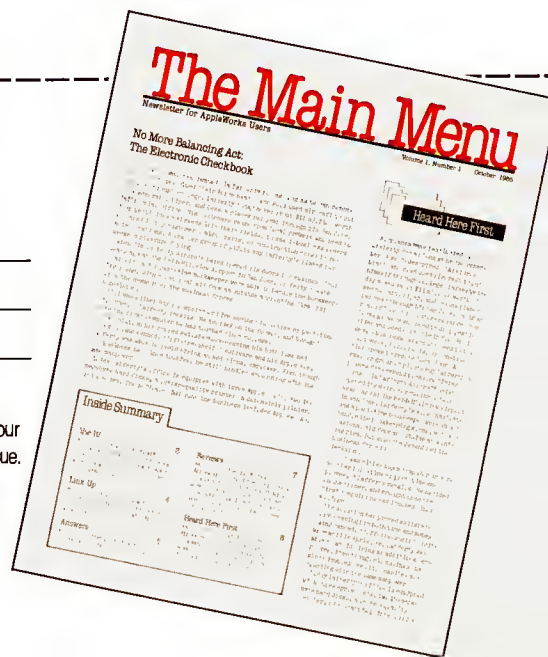
State _____

Zip _____

MONEY BACK GUARANTEE: If you are not completely satisfied with The Main Menu, you may cancel your subscription and receive a full refund on all unmailed issues. Please allow 6-8 weeks for delivery of your first issue.

Mail to: **The Main Menu** • CW Communications/Peterborough
PO Box 802 • Peterborough, NH 03458-997

ANAIC



**Save 50%
with Charter Offer**

Writing a C Program

You can't simply type in a C program and run it, as you would a BASIC program. Many steps are involved in producing an executable C program. First, you must type the C source code into a text editor, then call the C compiler to expand any macros you included and to translate the source code into machine or object code. Finally, you need to link your object file to any libraries or external routines your program needs. Only then do you have a program you can run. If your program has bugs, you have to return to the source-code stage to correct your errors, then recompile the program before you can run it again.

Although writing a C program can be a laborious proposition, the fast, efficient code that results is usually worth the effort. Compiling parts of a program separately and linking them when you need to can greatly reduce the time involved in developing a long program. Debugging ten 20-line modules is a lot easier than debugging 200 lines of source code.

Variable-Type Conversion

Although it's a powerful language, C has a few drawbacks. Unlike Pascal source code, which is easy to read and understand, C source code is quite cryptic. Keywords and function names are abbreviated, and you'll find a lot of parentheses and braces floating around. All in all, C source code isn't easy to follow.

More importantly, C places a great deal of the burden of type checking on the programmer. It's easy to convert

a variable from one type to another in a C program (to access certain external routines, for example), and, many programmers say, too easy to do so accidentally, perhaps destroying the integrity of your data. C gives you great flexibility in type conversion, but it also makes you responsible for keeping things straight.

Despite its quirks, C strikes a balance between the speed and power of assembler and the ease of use of high-level languages: It's the ideal tool for mining the power of your new Apple IIGs. ■

Bob Ryan, former technical editor for *inCider*, is currently technical editor for *AmigaWorld* (CW Communications).

References

Apple Computer Corp., *Apple IIGS Technical Reference Manual*. Addison-Wesley, Reading, MA, 1986. Roadmap to IIGS ROM routines.

Hancock, Les, and Morris Krieger, *The C Primer: 2nd Edition*, McGraw-Hill, New York, 1986. The best C tutorial I've ever run across.

Kernighan, Brian W., and Dennis M. Ritchie, *The C Programming Language*, Prentice Hall, 1978. The C Bible—the definitive description of C.

Reserved Words in C

Lowercase reserved words, or keywords, are recognized by the C compiler and define the types of operations the computer is to perform.

auto	declares automatic variables
break	in a loop, lets control pass to next statement
case	in a multiple-alternative situation, precedes integer or character constant
char	declares character variables
continue	passes control back to top of loop
default	specifies option if cases of <i>switch</i> statement don't match
do	with <i>while</i> , tests a condition after executing a statement
double	declares double-precision variables
else	extends the <i>if</i> control structure
enum	draws parallels between different types of variables
extern	designates a global variable
float	declares a floating-point variable
for	designates loop structure, a reorganization of <i>while...do</i> syntax
goto	indicates unconditional branch to specified label

if	indicates conditional control structure
int	declares a variable of type integer
long	allocates additional bytes for larger integer values
register	gives a variable priority use of an internal register, gives programmer lower-level control of program
return	ends function, returns execution to point of function call
short	indicates a short integer, allows faster execution speed
sizeof	returns number of bytes used to store a variable
static	indicates local variables in functions, but values aren't lost if function is called again
struct	groups variables of different types into a logical unit
switch	in multiple-alternative situation, precedes integer expression to be evaluated and matched against constant values
typedef	declares type of variable
union	allocates storage space for variables of different types
unsigned	declares a positive integer variable
void	denotes a type of function that doesn't return a value
while	tests a condition before executing a statement

MEMBERS PAY WHOLESALE + 8% OR LESS AND GET 14-30 DAY SOFTWARE RENTALS



OUR ROSTER INCLUDES SOME OF THE MOST IMPORTANT NAMES IN INDUSTRY:

AT&T	General Motors
Barclays Bank	Gillette
Bell & Howell	Hewlett Packard
Citibank	Hughes Aircraft
Columbia University	IBM
Exxon	ITT
Farm Bureau Insurance	Kodak
General Electric	Yale University

Plus 150,000 THOUSAND satisfied consulting firms, small businesses, governments, schools and value minded individuals.

**CALL TOLL FREE
800-621-SAVE**

(Orders—Membership and Advice!)
In Illinois Call (312) 280-0002
Your Membership Validation Number **1836**

You can validate your membership number and, if you wish, place your first money-saving order over the phone by using your VISA, MASTERCARD or AMERICAN EXPRESS. Our knowledgeable sales consultants are on duty Mon.-Fri. 8:00 AM to 7:00 PM, Sat. 9:00 AM to 5:00 PM CST.



PERSONAL COMPUTER NETWORK
320 West Ohio Street
Chicago, Illinois 60610



PC NETWORK MEMBERSHIP APPLICATION

YES! Please enroll me as a member in the PC NETWORK™ and send my catalog featuring thousands of computer products, all at just 8% above DEALER WHOLESALE PRICES. I will also receive "THE PRINTOUT", a special quarterly update on merchandise at prices BELOW even those in my wholesale catalog and all the other exclusive, money-saving services available to Members. I am under no obligation to buy anything. My complete satisfaction is guaranteed.

Please (✓) all boxes that apply: **836**

• **Basic Membership**
With 14 Days Rental
Business Software Rental Library \$25 ☐ add'l. per year
Games Software Rental Library \$10 ☐ add'l. per year

• **Special V.I.P. Membership**
With 30 Days Rental
BOTH Business and Game
Software Rental Libraries \$30 ☐ add'l. per year

☐ Bill My Credit Card: ☐ VISA ☐ MasterCard ☐ American Express
Account Number:

Exp. Date _____
mon. yr.

☐ Check or Money Order Enclosed for \$ _____

Name _____

Address _____ Apt. No. _____

City _____ State _____ Zip _____

Telephone () _____

My Computer(s) is: ☐ IBM PC ☐ IBM XT ☐ IBM AT

☐ Apple II ☐ Macintosh Other _____

Signature _____
(Signature required to validate membership)



LASER 128

12K RAM, 1 Internal Drive,
Apple IIe/IIc Compatible
1 Parallel and 2 Serial Ports Included

\$355.00*



APPLE IIc

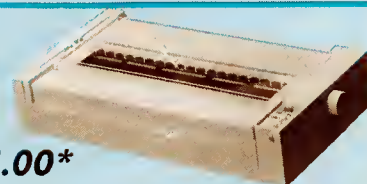
128K, 2 Serial Ports,
RGB Port Included

CALL FOR BEST PRICE

IMAGEWRITER II

\$419.95*

15" IMAGEWRITER **\$475.00***



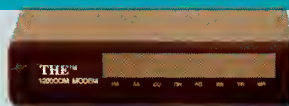
Brother	HR-20 33CPS/132COL Par/Ser LQ Printer	\$350.00*
Citizen	120 120CPS Par/Matrix	169.00*
Citizen	Premiere 35/CPS 15" Par/LQ	420.00*
Epson	FX 85 80COL/160CPS	169.00*
Epson	FX 286 200CPS/132COL Par/Matrix	440.00*

**5 1/2" SS/DD
DISKETTES**
Guaranteed For Life!

Box of 10

\$7.95*
.44

Box of 50



THE™ 1200 BAUD EXTERNAL MODEM

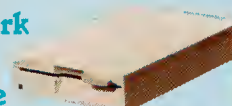
\$277.00*

APPLE WORKS

Most Popular Integrated
Package for Apple IIe/IIc
Complete Word Process,
Spreadsheet/Data Base

\$160.00*

**PC Network
External
Disk Drive**



IIe Drive **\$85.00*** IIc Drive **\$95.00***

INFOCOM



Print Shop **Bank Street Writer**
\$24.75* **\$35.25***

HAYDEN

Sargon III

\$26.00*



Apple II

\$18.00*

Mac **\$22.00***

OVER 30,000 PRODUCTS AT EVERYDAY LOW, LOW PRICES!

EDUCATIONAL SOFTWARE (Please add \$1 shipping and handling for each title ordered.)

Bluechip Baron, Millionaire or Tycoon	ea. \$23.66*	Wholesale	Microprose F-15 Strike Eagle/Silent Serv.	ea. \$18.50*	Wholesale
Broderbund Bank Street Writer	35.25*		►Mindscape The Mist, First Blood Part 2, or	ea. 21.00*	
Broderbund Lode Runner or Choplifter	17.25*		A View to a Kill		
Broderbund Print Shop	24.75*		Origin Systems Ultima IV	32.97*	
Davidson & Associates Speed Reader II	31.00*		Pinpoint Publishing Micro Cookbook	21.00*	
Davidson & Associates Math Blaster	22.00*		Simon & Schuster Typing Tutor III—Mac Tool	28.25*	
Davidson & Associates Word Attack!	21.50*		Str-Tech Wizardry	26.97*	
Edu-Ware Algebra 1, 2, 3 or 4	ea. 23.95*		Spectrum Holobyte GATO	ea. 18.00*	
Epyx Temple of Aposhai	20.00*		►Spinnaker Alphabet Zoo, Face Maker, Story	ea. 15.25*	
Hayden Sargon III	24.75*		Machine, Hey Diddle Diddle, Rhymes & Riddles		
Infocom Deadline, Suspended, SeaStalker	ea. 24.00*		►Spinnaker Delta Drawing	20.75*	
Infocom Enchanter, Planet Fall, CutThroats	ea. 20.00*		Springboard The Newsroom	26.97*	
Infocom Zork I, Zork III	ea. 22.00*		Sublogic Flight Simulator II	27.25*	
Infocom Zork II, Witness, Hitchhiker's Guide,	ea. 20.00*		Sublogic Night Mission Pinball	20.00*	
Infocom Suspect, Infidel, Sorcery	ea. 22.00*		Timeworks Evelyn Wood Dynamic Reader	36.00*	

BUSINESS SOFTWARE (Please add \$2.50 shipping and handling for each title ordered.)

Apple Apple Works	\$160.00*	MicroPro Wordstar	\$165.00*
Arrays Home Accountant Expanded	42.00*	Microsoft Excel	197.50*
Ashton-Tate DBase II	275.00*	►Microsoft Multiplan (DOS or CPM)	97.50*
Beagle Brothers Triple Dump, Macroworks	ea. 19.00*	Microstuf Crosstalk XVI	89.00*
Borland International Turbo Pascal	35.00*	Monogram Dollars & Sense	55.00*
BPI GL, A/P, A/R, P/R, or INV Each Only	205.00*	Peachtree Back to Basics Accounting System	89.50*
Broderbund Bank Street Writer	35.25*	Satellite Software Word Perfect	72.00*
Broderbund Print Shop	24.75*	Sierra On-Line The General Manager	125.00*
Computer Associates SuperCalc IIIA	95.00*	Sierra On-Line Homeword w/Speller	59.97*
Data Transforms Fontrix	60.00*	Sierra On-Line Screenwriter Professional	72.00*
►Living Videotext ThinkTank—\$12K Mac	85.00*	Software Publishing File/Report for Apple II	68.00*
Meca Managing Your Money	99.00*	Software Publishing Write or Graph	61.00*
Megahaus Reportworks/Thinkworks/Mega	ea. 71.20*	Stoneware DB Master Ver. 4 Plus	145.00*
Human Edge Mind Prober	24.00*	United Software Industries Ascii Express Pro	64.75*

HARDWARE (Please add shipping and handling charges found in italics next to price.)

COMPLETE SYSTEMS

Apple Apple IIe, Apple IIc, Macintosh	CALL
AT&T 6300 PC CPU 2	\$1,775.00* (35.64)
128K/2 Floppy/1 Serial/1 Parallel	
►Central Point Laser 12B	355.00* (7.67)
Apple II+ / Apple IIc Compatible	
►Compaq DeskPro	1,805.00* (43.1B)
w/256K/1 Floppy/20MB Hard Disk	
Compaq Hard Disk/Portable 256K	CALL
►IBM PC Base System	1,910.00* (22.14)
with 256K 2DS/DD/FDC	
►IBM PC Professional Hard Disk	1,337.00* (31.77)
256K/DS/DD/FDC 20MB Hard Disk	
IBM PC/AT Base System	CALL
1.2MB Floppy/256K	
Toshiba T1100+Laptop	1,341.00* (26.82)
Computer w/256K 2 Floppies/1 Ser/1Par/MS-DOS	

DISK DRIVES & CONTROLLERS

Alps AP-100A Dual Disk Drives	309.00* (6.67)
Apple 140K External IIc Disk Drive	\$205.00* (4.43)
Apple Profile SMB Catalyst w/Kit	699.00* (15.10)
Apple UniDisk 3.5" w/accessory/kit	319.00* (6.89)
Corvus 6MB Hard Disk	675.00* (14.5B)
Haba 800KB DS/Mac Drive	349.95* (4.64)
IOmega Dual 10MB Bernoulli	1,700.00* (46.44)
Micro-Sci A2 143KB Drive	150.00* (5.00)
Micro-Sci Floppy Controller	65.00* (2.50)
Subsystem for Macintosh	
Paradise 20MB Hard Disk	745.00* (16.09)
Subsystem for Macintosh	
PC Network Apple IIc External Drive	95.00* (5.00)
►PC Network Apple IIc Disk Drive	85.00* (1.84)
Tecmar 10MB Hard Disk for Mac	799.00* (17.26)

MODEMS

Anchor Lightning 2400	\$309.00* (2.50)
Anchor Signalman Express	205.00* (5.00)
Hayes Micromodem IIe/Smartcom	125.00* (2.50)
Hayes Smartmodem300/SmartcomIIc	150.00* (1.50)
Hayes Smartmodem 1200	340.00* (5.00)
Hayes Smartmodem 2400	525.00* (5.00)
Novation Apple Cat II	174.45* (2.50)
Prometheus ProModem 1200	247.00* (6.00)
with Mac Pac	253.00* (6.00)
►Prentice Pop Com w/MacPac	215.00* (2.50)
1200 Baud Modem, Cable, Straighttalk	
U.S. Robotics Courier 2400BPS	345.00* (5.00)
U.S. Robotics Password 1200BPS	172.00* (2.50)
Zoom Modem IIc	95.00* (2.05)
THE "MODEMS ARE 100% HAYES COMPATIBLE"	
THE "1200 COM External	129.00* (5.00)
THE "2400 COM External	277.00* (5.00)

MONITORS

Amdek Video 300G Composite	\$110.00* (3.00)
Amdek Video 300A Composite	120.00* (3.00)
Amdek Color 600 RGB	365.00* (3.00)
Apple NEW! Super Color IIc	255.00* (2.55)
Apple Color Monitor IIc	259.00* (2.55)
Magnavox 14" Color RGB 640x280	275.00* (5.94)
Princeton HX-9 9" RGB Monitor	365.00* (3.00)
Princeton HX-12 RGB Monitor	360.00* (6.00)
Taxan 620-U High Res Color	382.00* (3.00)
Thompson 14" RGB Composite	270.00* (2.50)
Color Monitor 560x280	
Zenith ZVM 1230A NEW!	91.00* (2.50)
12" High Res Green/Non Glare	

BOARDS AND BUFFERS

AST Research Multi I/O-2	\$155.00* (2.50)
Microtek Dumping/GX	55.00* (2.50)
Orange Micro Grappler +	66.00* (2.50)
Orange Micro Serial Grappler	66.00* (2.50)
PC Network 280 Card	35.00* (2.50)
Quadrant Multicore 1 Parallel,	140.00* (2.50)
1 Serial, Clock, Expandable to 256K	
Quadrant MP-8K Microfazer	110.00* (2.50)
Buffer (Expandable)	
Quadrant eRAM-80COL w/64K	88.00* (2.50)
Street Electronics ECHO II	85.00* (2.50)
Speech Synthesizer	
Titan Technologies Accelerator IIc	207.35* (2.50)

PRINTERS

Apple 15" Imagewriter w/Mac kit	\$475.00* (10.26)
Apple Imagewriter II	419.95* (9.07)
80COL/200CPS NLO Color	
Apple LaserWriter	4,895.00* (75.00)
►Brother HR-20 23CPS 132COL	350.00* (7.56)
Citizen MSP-10 160CPS 80COL	259.00* (5.59)
Citizen MSP-15 160CPS 132COL	340.00* (7.34)
Citizen 120D 10" Par-4K Buf. w/Trac	169.00* (3.65)
Citizen Premiere 35	420.00* (9.07)
35 CPS Daisywheel 132COL/Fric +	
Epson LX-80 100CPS/80COL	225.00* (4.86)
Epson FX-85 160CPS/80COL	345.00* (7.45)
Epson FX-286 200CPS/132COL	440.00* (9.50)
►Epson LQ-1000 180CPS/60CPSNLQ	CALL
Epson DX-35 Daisywheel Printer	590.00* (12.74)
35CPS/132COL/True Letter Quality	
NEC 2030 20CPS Letter Quality	605.00* (13.00)
NEC 3530 33CPS Letter Quality	690.00* (14.90)
►Okidata ML-1B2 NEW! 120/CPS	188.00* (4.06)
LQ Model/Fric	
►Okidata Color 20 80CPS/100	129.00* (2.35)
LQ Model/Epson Graphics (Requires Interface)	
►Okidata ML-192/AP Sleek Design	315.00* (7.34)
160 CPS LQ Model/Fric/IBM Graphics	
Okidata ML-193P 132COL/160CPS	425.00* (9.18)
Panasonic KX-P1091 120/75/22CPS	220.00* (4.75)
10" Parallel w/Tractor	
Panasonic KX-P1092 180CPS 12"	304.85* (6.5B)
Parallel w/Tractor	
Toshiba P341 132COL/216CPS	699.00* (15.10)
Toshiba P351 132COL/288CPS	959.00* (21.34)

ACCESSORIES

Apple IIc Mouse w/mouse paint	\$69.00* (1.49)
►Assimilation Process MacTurbo	73.50* (2.50)
►3.5" Macintosh Diskettes w/Free Flip 'n' File	12.50* (1.00)
SS/DD (Box of 10)	16.95* (1.00)
DS/DD (Box of 10)	23.50* (1.50)
Curtis Diamond Surge Protector	39.00* (1.50)
Curtis Ruby Surge Protector	25.00* (1.50)
Hayes Mach II Joystick for IIc	26.50* (1.50)
Hayes Mach III Joystick w/Fire Button	11.95* (1.50)
Innovative Concepts Flip 'n' File 50	56.97* (1.50)
Kensington System Saver Fan	25.00* (1.50)
PC Network Cooling Fan with Surge	45.00* (1.50)
Protector & Dual Outlets	
P.T.I. 585 DataShield Surge Protector	158.00* (2.50)
Thunderware Optical Digitizer	17.00* (1.50)
No Costly Camera Equipment Needed!	
WP Printer Paper 2600 Perfected Sheets	17.00* (1.50)



NEW! PC NETWORK ONLINE

A 24 Hour Bulletin Board and
Information Service Center

- **FREE SOFTWARE:** Over 20,000 downloadable shareware titles.
- **NEWS FLASHES AND REVIEWS:** Tie into the worlds largest computer News Network .Get all the latest on Apple,™ IBM,™ Mac, Unix and related subjects.
- **PLACE ORDERS, LEAVE MESSAGES FOR TECHNICAL SUPPORT—DAY OR NIGHT.**
- **LATEST PRICING: and Special Sales on PC Network Products.**

PC Network improves on the benefits its members continue to enjoy..

- **WHOLESALE + 8% PRICING.**
- **10 DAY RETURN ON HARDWARE**
- **600 PAGE NETWORK CATALOG**
- **QUARTERLY NEWSLETTER**
- **14-30 DAY SOFTWARE RENTAL**
- **FREE TECHNICAL SUPPORT**

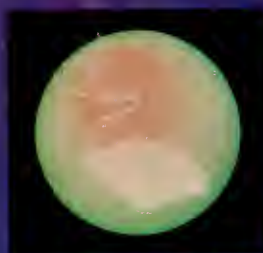
30 Day Money Back Guarantee on Membership

TOLL FREE (800) 621-SAVE

In Illinois (312) 280-0002 Validation Code I836
Customer Service and Order Status (312) 280-1567

DELVING INTO ASSEMBLY LANGUAGE

by Roger Wagner



The Apple IIGS may look like a IIe to all current software, but treating it like any other Apple II would be to ignore its tremendous potential for assembly-language programming. Whether you're creating a simple subroutine or a complex application, don't miss out on the programming power the IIGS offers you.

The Apple IIGS is a superset of the Apple II, and many advanced features are available to the assembly-language programmer with a minimum of effort. In addition, the operating system is a constant, with ProDOS the common file environment.

Soul of a New Machine

The central issue for any assembly-language programmer is, of course, the machine's microprocessor. The Apple IIGS uses the 65816, a descendant of the original Apple II's 6502. The 65816, though, has 36 new instructions and 11 new addressing modes, for a total of 91 individual new instructions.

What's the advantage? When the 65C02 was introduced, it simplified certain programming steps by adding new instructions. For example, to set a memory location to zero in the 6502, you first load the accumulator with zero, then store that value in the desired memory location. The 65C02 makes this easier (and eliminates use of the accumulator entirely) with the instruction STZ, which stores a zero in the designated location. The 65816 not only adds convenient instructions like MVN (move block negative) and MVP (move block positive), which move a block of memory with a single instruction, but adds 16-bit (2-byte) operation and larger memory addressing, as well.

EASL

Assembly-language programmers are looking to the future—with a powerful microprocessor and new tools in ROM, the IIGS is giving them fresh inspiration.



To understand why 16-bit operations are useful, consider the problem of adding a large offset (greater than 256) to an existing 2-byte address in the Apple IIe. You'd usually do this by individually adding the low- and high-order bytes; it might take seven instructions in assembly language.

In the 65816, you can set the accumulator, X, and Y registers to be 16 bits long, which means that any of them can contain a complete 64K address and you can add a large value to a 2-byte address with just four instructions. This takes fewer microprocessor cycles to accomplish, and thus you get your answer faster than you would with a 6502 or 65C02.

The net result is that programs written specifically for the 65816 will run faster and use less memory than equivalent programs written for the 6502 or 65C02.

Although not a direct result of using the 65816, the Apple IIgs also runs about twice as fast as an Apple IIe or IIc, and this, combined with the inherently faster execution of 65816 programs themselves, yields a speed increase of four to eight times over an equivalent 6502/C02 program.

The other big advantage of the 65816 is its ability to address a larger amount of memory than the 6502/C02. You address a memory location by setting up a bit pattern in a microprocessor register. This register correlates to the microprocessor's *address bus*, the group of parallel wires needed to address a given memory location.

The number of wires in the address bus determines the amount of continuous memory a program can address. In the 6502/C02, the address bus is 16 bits (2 bytes) wide, and 64K becomes the limit of addressable memory.

In Apple II's with more memory (such as the 128K Apple IIe) or memory-expansion cards, the 6502/C02 operates on blocks of 64K switched in one at a time. A soft switch somewhere in the \$C000 range of memory controls the block selected at any particular time.

The microprocessor itself can't treat the larger amount of memory as a continuous block. This, among other reasons, is why so few programs take advantage of larger amounts of memory in an Apple II. (See "Bank-Switched Memory," August 1986, p. 50, and "6502 Addressing," Apple Clinic, June 1986, p. 26, for more information.)

The 65816, however, has a 24-bit (3-byte) address bus, and addresses specified in a program can be 3 bytes long, yielding a maximum of 4.25 megabytes (256 x 64K) of memory addressable by the microprocessor itself. A great deal of the credit for the improvements in the Apple IIgs goes to the designers of the 65816 itself, Western Design Center of Phoenix, Arizona.

Tools for Programming

The microprocessor itself represents a large territory for assembly-language programmers to explore in the coming years, but there's even more to make the adventure exciting. Apple has also built a number of "tools" into the IIgs, tucked into the 128K of ROM that comes in each machine.

These tools include QuickDraw II, the SANE Numeric package, Memory Manager, Desk-Accessory Manager, Event Manager, Menu Manager, Window Manager, Control Manager, Line Editor, Dialog Manager, Scrap Manager, and Print Manager. If you're familiar with the Macintosh, you'll recognize the similarity.

The presence of these tools in every machine means that a programmer can quickly put true (not simulated)

windows, pull-down menus, dialog boxes, interrupt handling, and much, much more into a program without writing any of the specific code that performs the function or dedicating large amounts of RAM to the job.

With the Apple II, many programmers use this technique to take advantage of built-in Monitor and Applesoft routines to enhance their assembly-language programs. The Monitor and Applesoft make up 12K—imagine what you'll be able to do with ten times that amount!

Whatever IIgs tool you use, you follow the same procedure. The stack first holds all data to be passed to the software tool, including a code number that identifies the particular tool you want to call. The program then executes all tool calls by means of the equivalent of a JSR (jump to subroutine) to address \$E10000, the Tool Locator. The Tool Locator also lets you use disk-based tools and automatically loads whatever it needs if it can't find it already in ROM. After the tool call, any returned data are on the stack, ready to be pulled off by the calling program.

The Apple IIgs Monitor also includes a mini-assembler and disassembler that work with 6502, 65C02, and 65816 instructions, as well as disassembling ProDOS MLI (machine-language interface) calls.

Hardware Extras

In addition to its software enhancements, a number of hardware additions make the IIgs a more interesting machine. Among them are a built-in clock, a 32-oscillator sound-synthesis chip, an improved graphics display (320 by 200 pixels with 16 colors, or 640 by 200 pixels with four colors), AppleTalk interface, and the Apple Desktop Bus. The Desktop Bus, also called the Front Desk Bus, is an all-inclusive keyboard and mouse interface you can expand to interface to graphics tablets, numeric keypads, and other input devices.

Keep in mind that the assembler you're using must be able to accommodate the 65816 with its new instruction set. Apple Computer (20525 Mariani Avenue, Cupertino, CA 95014, 408-996-1010) provides an updated version of the assembler ORCA/M to handle it; the development package also includes a macro library to make calling IIgs tools easier. Roger Wagner Publishing (10761 Woodside Avenue, Suite E, P.O. Box 582, Santee, CA 92071, 619-562-3670) offers a MerlinPro extension called Merlin 16, and the S-C Macro Assembler from S-C Software (P.O. Box 280300, Dallas, TX 75228, 214-324-2050) also supports 65816 instructions.

All in all, if you've enjoyed programming on the Apple II, the Apple IIgs will be a treat. The only thing more impressive than the creation of the Apple II itself is what resourceful, inventive programmers have been able to do with it over the years, in many cases surpassing what even the original designers thought possible.

If the past is any indication, the IIgs will give birth to an entirely new generation of software. I hope you'll be a part of it. ■

Roger Wagner is the author of Assembly Lines: the Book and is president of Roger Wagner Publishing, the publisher of Merlin and MerlinPro assemblers. Write to him at Roger Wagner Publishing, 10761 Woodside Avenue, Suite E, P.O. Box 582, Santee, CA 92071.

What you should know about the International Apple Core.

If you're like most Apple users, you don't realize the many benefits of an IAC membership. Or what it can do for you and your computer.

So what's an IAC?

International Apple Core™ is a non-profit organization of Apple users and user groups and has been serving Apple users since 1979. We are dedicated to providing education, information and support to users of Apple technology.

The International Apple Core is comprised of thousands of individual members, and hundreds of user group members. Get together with your fellow members and share information on new applications, keep up on Apple events, receive specialized training, or learn the latest on new software and hardware products.

If you'd like to join a local users group we can help you find one. Want to start a users group in your area? IAC can help.

Support for your Apple and you.

Understand your computer better with such books as *Beneath Apple DOS*, *Beneath Apple PRO-DOS*, and *Universal File Conversion*, all discounted to members.

Interested in computer insurance to protect your hardware, software, and even your data? IAC can help you obtain coverage through "Data Security Insurance".

Discounts on hundreds of public domain software programs, as well as selected commercial software products.

Information, please.

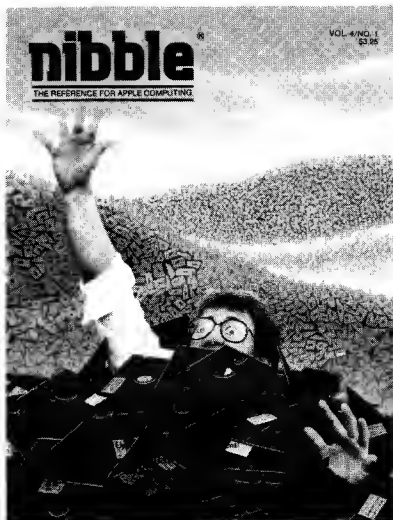
IAC provides many sources of information. Your \$30 yearly membership fee brings you IAC's newsletter "IAC Express", discounts on our many products, access to IAC's BBSs and a 12-issue subscription to *Nibble* magazine devoted to Apple systems and compatibles. *Nibble* magazine features more than \$50 dollars worth of ready to run Apple programs in each issue. The programs focus on home, business, education and entertainment. *Nibble* also features new products, reviews, tips and techniques for learning more about your Apple and having fun doing it!

As a member, you may subscribe to our Disk of the Month (DOM); \$60 will bring you a one year subscription. The DOM is a disk of public domain software which is mailed directly to your home each month with themes such as utilities, education, games, or a potpourri of different programs.

A membership That pays you.

As a member of the IAC you nearly get paid with what you will save. By joining you will save almost 20% on our AppleWorks Mailing Program which is used to create automated form letters from your AppleWorks database and word processing files.

Discounts on books, public domain software, and even *IACcalc* spreadsheet for under \$40.00.



Circle 157 on Reader Service Card.

Apple, Apple II, Apple III and SOS are registered trademarks of Apple Computer, Inc.

International Apple Core is Licensed by Apple Computer, Inc. to use certain of the latter's trademarks.

IACcalc and *3Pak* are trademarks of International Apple Core. CP/M is a registered trademark of Digital Research.

Nibble is a registered trademark of microSPARC, Inc.

Get an education.

You'll receive many educational benefits from our software programs. You'll receive 20% off our 3Pak™ series of theme packaged programs which includes Educational, Financial, Games and the popular Logo. We have an Applesoft Tutorial and Education disk which is great for children.

Educational books are available to members at discounts of up to 20% off the cover price, with such titles as *Understanding the Apple II*, *Understanding the Apple II/e*, *Bag of Tricks* and more.

Invite your friends and save.

IAC offers user groups a special package. For \$90 your group receives a full year IAC membership, IAC Express, all members of your group will have access to our BBSs, a subscription to *Nibble* for your group's library, and also a subscription to our DOM (disk of the month). Your group will be listed among the other hundreds of IAC user groups so that other local IAC members and Apple users will be able to locate you easily.

Individually or as a group you can't lose. So fill out the membership coupon below now, and don't forget to ask for our product catalog.

Membership Application

Individual Membership

\$30 USA Individual
\$40 Canada
\$75 Elsewhere

Name _____
Address _____
City _____
ST/Zip _____ Country _____
Phone # _____

All memberships include a 12-month subscription to *Nibble* magazine. Please allow 6-8 weeks for delivery of your first *Nibble*.



**INTERNATIONAL
APPLE CORE™**

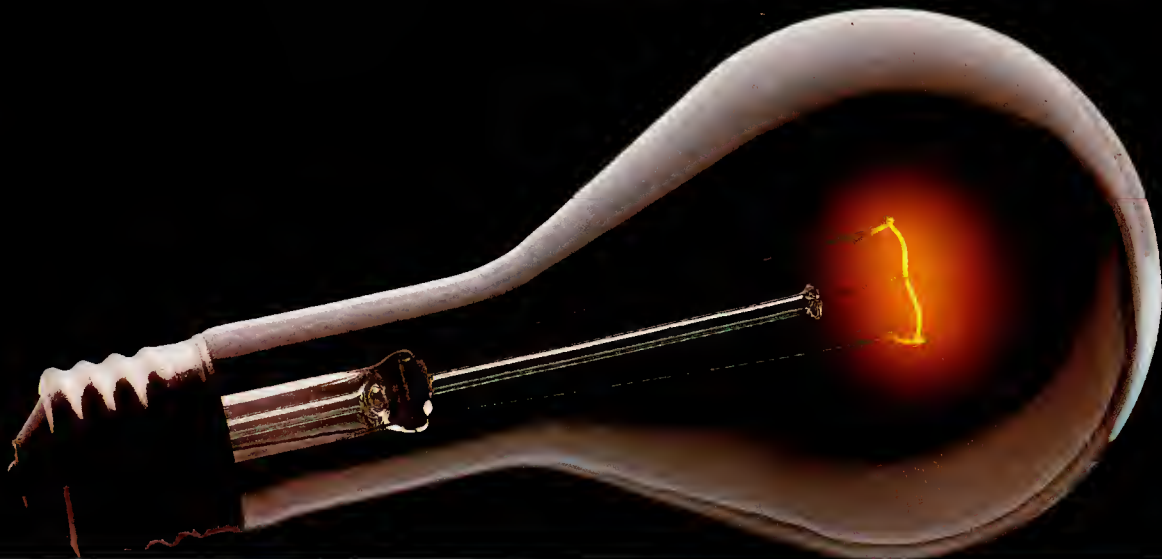
International Apple Core
Membership Dept. I-04
2278 Trade Zone Blvd.

San Jose, CA 95131 (OR phone) (408)-262-9419

User Group Memberships

\$90 USA Group package
\$155 User Group package elsewhere
— I'm already a *Nibble* subscriber,
Please extend my existing subscription.

Payment enclosed (US funds drawn on a US bank only)
____ VISA ____ Mastercard
Exp. Date _____
Card # _____
Signature _____



COMPU SERVE. YOU DON'T HAVE TO KNOW HOW IT WORKS TO APPRECIATE ALL IT CAN DO.

You don't have to know about hardware. You don't have to know about software. All you have to know is that CompuServe is a computer information service. You subscribe to it.

And in return, you have access to an incredible amount of information, entertainment, communications and services right at your fingertips.



Here are a few of the hundreds of things you can do with CompuServe.

COMMUNICATE

Even beginners can compose, edit, send and file messages the first time they go online with CompuServe's **EasyPlex™ Electronic Mail**. Friends, relatives and business associates—anywhere in the country—can stay in constant, convenient touch.

CB Simulator features 72 channels for "talking" with thousands of other subscribers throughout the country and Canada. The chatter is frequently hilarious, the "handles" unforgettable and the friendships hard and fast.

More than 100 CompuServe Forums welcome your participation in discussions on all sorts of topics. There are

Forums for gourmet cooks, golfers, musicians, pilots, sailors and more, all designed to show you how easy and fun it can be to get the most out of your computer.

If you want to learn more about your computer system, CompuServe's at your service. Our **Users Forums** cater to specific computer makes and models, and offer information and expertise on many different types of machines. You'll find electronic editions of popular computer periodicals. You can even find free software.

And if you need answers to software questions, seek out a **Software Forum**. You can often find solutions quickly and easily online.

Bulletin Boards let you post messages where thousands will see them. Use our National Bulletin Board or the specialized bulletin boards found in almost every Forum.

HAVE FUN

You'll find all sorts of sports and entertainment trivia games, plus brain-teasing educational games. You can go it alone or compete against

players from all over the country. Test your wits in the only online TV-style game show with real prizes. Then, when you're ready, go for the ultimate in excitement and get into one of our interactive space adventures.

CompuServe's **movie reviews** keep that big night at the movies from being a five-star mistake. **Soap opera updates** keep you up on all the latest turmoils and tragedies on your favorite daytime dramas.

For leisure-time reading and relaxing, look into the electronic editions of some of your favorite magazines, including OMNI On-Line.

SHOP

CompuServe's **ELECTRONIC MALL™** lets you take a coast-to-coast shopping spree without ever leaving home. It's an exciting and easy way to shop online, buying name-brand goods and services from nationally known merchants.

SAVE ON TRIPS

CompuServe's travel services let you control your own travel arrangements through the convenience of your personal computer. Scan flight availabilities on almost any airline worldwide. Find airfare bargains, then book your own flight online.



With CompuServe you've got direct and connecting schedules for national and international flights. Plus complete listings of over 28,000 hotels around the world.

MAKE PHI BETA KAPPA

When you run out of the answers at homework time, it's time to turn to CompuServe for the complete set of continuously updated encyclopedias that doesn't take up an extra inch of shelf space.

The College Board, operated by the College Entrance Examination Board, gives tips on preparing for the SAT, choosing a college and getting financial aid.



KEEP HEALTHY

HealthNet will never replace a real, live doctor—but it is an excellent and readily available source of health and medical information.

On a more personal note, **Human Sexuality** offers information on a variety of topics concerning this very important aspect of human behavior. Hundreds turn to it for honest, intelligent and candid answers.

BE INFORMED

CompuServe puts all of the latest news at your fingertips. Our sources include the AP news wire (covering all 50 states, plus national news), the *Washington Post*, the *St. Louis Post-Dispatch*, specialized business and trade publications and more.

Find out instantly what Congress did today, who finally won the game and what's happening back in Oskaloosa, with the touch of a button. And, our executive news service lets you tell us what to watch for. We'll electronically find, "clip" and file news for you...to read whenever you'd like.

INVEST WISELY

Our comprehensive investment help just might tell you more about the stock you're looking at than the Chairman

of the Board already knows. (Don't know who the chairman is? Chances are, we can fill you in on that, too.)

CompuServe gives you complete statistics on over 10,000 NYSE, AMEX and OTC securities. Historic trading statistics on over 90,000 stocks, bonds, funds, issues and options. Five years of daily commodity quotes. Standard & Poor's. Value Line. And more than a dozen other investment tools.

SUPERSITE facilitates business decisions by providing you with demographic and sales potential information by state, county and zip code for the entire country.

The national business wire provides continuously updated news and press releases on hundreds of companies worldwide.

GET SPECIALIZED INFORMATION

Pilots can get personalized flight plans, weather briefings, weather and radar maps, etc. Entrepreneurs use CompuServe too for complete step-by-step guidelines on how to incorporate the IBMs of tomorrow. Lawyers, doctors, engineers, military veterans and businessmen of all types use similar specialized CompuServe resources pertinent to their unique needs.

So much for so little.

CompuServe makes the most out of any computer, and all you pay is a low, one-time cost for a Subscription Kit (suggested retail price \$39.95). Usage rates for standard online time (when CompuServe is most active) are just 10¢ a minute.

In most major metropolitan areas you can go online with a local phone call. Plus, you'll receive a **\$25.00 Introductory Usage Credit** with the purchase of your CompuServe Subscription Kit.

So easy the whole family can go online.

CompuServe is "menu-driven," so beginners can simply read the menus (lists of options) that appear on their



screens and then type in their selections. Experts can skip the menus and just type in GO followed by the abbreviation for whatever topic they're after.

If you ever get lost or confused, just type in H for help, and we'll immediately cut in with instructions that should save the day. Plus, you can always ask questions online through our feedback service or phone our Customer Service Department.

Here's how to subscribe.

To access CompuServe, you need a computer, a modem (to connect your computer to



your phone) and, in some cases, some simple communications software.

Now you're ready to order your CompuServe Subscription Kit.

For your low, one-time subscription fee, you'll receive:

- a complete, easy-to-understand, 170-page spiral-bound Users Guide
- your exclusive preliminary password
- a subscription to CompuServe's monthly magazine, *Online Today*

All this, plus:

- a \$25.00 usage credit!

To order your Subscription Kit or to receive more information, call **800-848-8199** (in Ohio, 614-457-0802).

CompuServe Subscription Kits are also available in computer stores, electronic equip-

ment outlets and household catalogs. You can also subscribe with materials you'll find packed with many computers and modems sold today.

CompuServe. You don't have to know how it works to appreciate all it can do—for you.

CompuServe®

Information Services, P.O. Box 20212
5000 Arlington Centre Blvd., Columbus, Ohio 43220

An H&R Block Company

EasyPlex and ELECTRONIC MALL are trademarks of CompuServe, Incorporated.

The Experts in Accessories

CURTIS

DIAMOND SP-1

Switched; adapts to duplex outlet; 6 ft. power card, Built-in Circuit Breaker • 6 Outlets, 15 Amps Total 125 Volts, 1875 Watts • Operating Temperature: -40°C to +85°C • Peak Pulse Power Dissipation @ 25°C, 585,000W for 20 Micro Sec. • Maximum Clamping Voltage @ Test Current 50A (8/20 Micro Sec.) 340V Clamping Occurs Line to Line (Normal Mode) and Line to Ground (Common Mode) • Clamping Response Time: 1 Nanosecond (1 x 10⁻⁹ sec.) • Dielectric Test: 3000 VAC 60 Sec. • Forward Surge Rating @ 25°C, 1440 Amps for 1/120 Sec., Lifetime Warranty

Retail \$49.95

RUBY SPF-2

Switched; EMI-RFI filtered; plugs into duplex outlet; 6 ft. power card, Built-in Circuit Breaker • 6 Outlets, 15 Amps Total 125 Volts, 1875 Watts • Operating Temperature: -40°C to +85°C Peak Pulse Power Dissipation @ 25°C, 585,000W for 20 Micro Sec. • Maximum Clamping Voltage @ Test Current 50A (8/20 Micro Sec.) 340V Clamping Occurs Line to Line (Normal Mode) and Line to Ground (Common Mode) • Clamping Response Time: 1 Nanosecond (1 x 10⁻⁹ sec.) • Dielectric Test: 3000 VAC 60 Sec. • Forward Surge Rating @ 25°C, 1440 Amps for 1/120 Sec. • Mode Noise Protection: Normal and Common Mode • Noise Rejection Frequency: 150KHZ-30MHZ • Attenuation: 5DB-58DB, Lifetime Warranty

Retail \$89.95



EMERALD SP-2 Switched; plugs into duplex outlet; 6 ft. power card, Built-in Circuit Breaker, 6 Outlets, 15 Amps Total 125 Volts, 1875 Watts From Single or All Combined • Operating Temperature: -40°C to +85°C • Peak Pulse Power Dissipation @ 25°C, 585,000W for 20 Micro Sec. • Maximum Clamping Voltage @ Test Current 50A (8/20 Micro Sec.) 340V Clamping Occurs Line to Line (Normal Mode) and Line to Ground (Common Mode) • Clamping Response Time: 1 Nanosecond (1 x 10⁻⁹ sec.) • Dielectric Test: 3000 VAC 60 Sec. • Forward Surge Rating @ 25°C, 1440 Amps for 1/120 Sec., Lifetime Warranty

Retail \$59.95



SAPPHIRE SPF-1

Switched, EMI-RFI Filtered, adapts to duplex outlet; 6 ft. power card, Built-in Circuit Breaker • 3 Outlets, 15 Amps Total 125 Volts, 1875 Watts From Single or All Combined • Operating Temperature: -40°C to +85°C • Peak Pulse Power Dissipation @ 25°C, 585,000W for 20 Micro Sec. • Maximum Clamping Voltage @ Test Current 50A (8/20 Micro Sec.) 340V Clamping Occurs Line to Line (Normal Mode) and Line to Ground (Common Mode) • Clamping Response Time 1 Nanosecond (1 x 10⁻⁹ sec.) • Dielectric Test: 3000 VAC 60 Sec. • Forward Surge Rating @ 25°C, 1440 Amps for 1/120 Sec. • Mode Noise Protection: Normal and Common Mode • Noise Rejection Frequency: 150KHZ-30MHZ • Attenuation: 5DB-58DB, Lifetime Warranty

Retail \$79.95

All Curtis Surge Protectors meet or exceed IEEE standards 587-1980 Guide for Surge Voltages in AC Power Circuits.

The Ones To Ask For

Curtis Electronic Surge Protectors are built to provide surge protection for any microcomputer for a lifetime. Constructed with precision, using advanced semiconductor technology, the Curtis Jewels prevent damage to microcomputer systems and data from powerline overvoltage.



"surges, spikes and glitches." Surge protection from the Curtis Jewels is your guarantee of the best line of defense for your valuable hardware and data, at a price that won't shock you. Get your computer the protection it deserves with Curtis — the experts in accessories.

Curtis products are available nationally from leading Dealers, Distributors, and Retail Chains.

In Canada: Micro-Computer Products, P.O. Box 235, Ajax, ONT, Canada L1S 3C3, (416) 427-6612

For the Curtis dealer nearest you call (603) 924-3823

Manufacturing Company, Inc.

CURTIS

305 Union Street, Peterborough, NH 03458

TYPING MADE EASY IS THE BEST TYPING PROGRAM YOU CAN BUY.

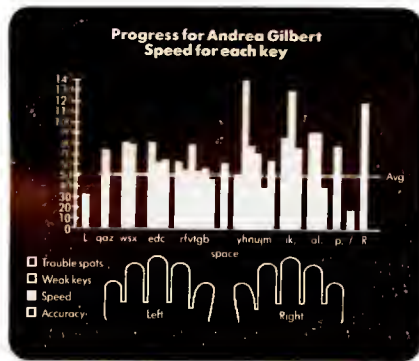
HERE ARE 4 REASONS WHY:

1. TYPING MADE EASY IS THE ONLY PROGRAM THAT IS GUARANTEED TO EFFECTIVELY TEACH YOU TO TYPE.

Use TYPING MADE EASY for three weeks and you will be able to type more than 25 wpm. If you can't, send us the product, and we'll refund your money. No hassles, no problems. We're that sure it works.

2. TYPING MADE EASY AUTOMATICALLY ADJUSTS ITS DRILLS TO IMPROVE YOUR WEAK AREAS.

As you type, the program monitors the speed of each finger and your total accuracy. Fingers and specific letters that are causing you trouble are automatically given extra drills.



TYPING MADE EASY provides analysis of each finger's strengths and weaknesses. Easy-to-read graphic displays allow you to keep track of your progress.

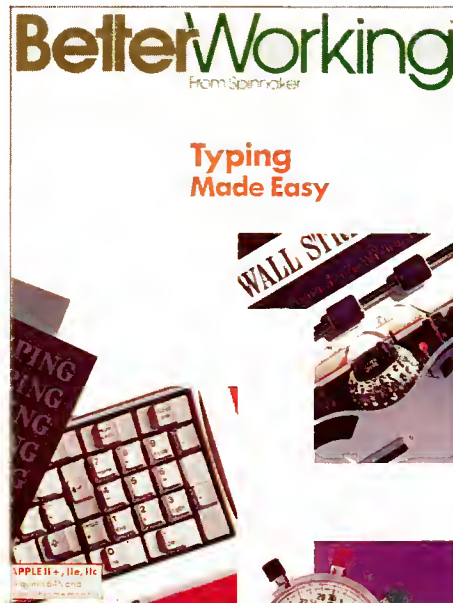
3. TYPING MADE EASY IS USED BY MORE FORTUNE 500 COMPANIES THAN ANY OTHER TYPING PROGRAM.

Purchasing managers at companies like AT&T, Blue Cross and Blue Shield and Westinghouse Electric Co. understand that their executives need to type in order to take advantage of today's computer technology. They wanted a program that used the computer to teach typing. They wanted a program that was fast, efficient and effective. They chose TYPING MADE EASY.

4. TYPING MADE EASY IS THE ONLY TYPING COURSE THAT FOLLOWS A PROVEN TYPING CURRICULUM.

Designed in conjunction with leading educators, TYPING MADE EASY uses a time-tested typing curriculum. It allows you to learn faster and to remember the skills you've learned. Because it is so good, TYPING MADE EASY is the *only* typing program used at America's leading secretarial school.

When you buy the best, you expect to pay a little more. Incredibly, TYPING MADE EASY costs no more than its competitors. And because it comes with a money-back guarantee, you've got nothing to lose. So if you're going to buy a typing program, why not buy the best? TYPING MADE EASY.



Available for: Apple II series (monochrome monitor only), Apple Macintosh and IBM PC/XT/AT. You can find TYPING MADE EASY at your local retailer or order direct from us. Call 1-800-826-0706. Illinois residents call 1-800-826-1330. Only MasterCard, VISA and American Express accepted for phone orders.

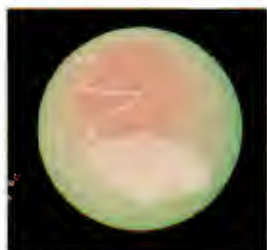
Better Working
From Spinnaker

BETTERWORKING • VIDEOS • SPINNAKER • TELARIUM • FISHER-PRICE • WINDHAM CLASSICS • UXB • BE

DESKTOP ORGANIZERS

Take the drudgery out of desktop management: inCider evaluates three program selectors that will organize your software housekeeping.

by Cynthia E. Field



Maybe you and your Apple II can mix words and numbers like a gourmet chef and his Cuisinart, but repetitive computing tasks are about as much fun as the stack of dirty dishes in the kitchen. Let's face it: Typing pathnames and swapping disks is the pits!

Luckily, a new breed of software utility—program selectors, or desktop organizers—can revolutionize your disk housekeeping chores, using Macintosh-style icons and menus to make child's play out of program juggling or ProDOS management. While the three desktop packages tested here differ in many subtle and not-so-subtle ways, they have one trait in common: They'll have you working more effectively than ever before.

Mac-coutrements for ProDOS

The tested trio—Quark's **Catalyst**, International Solutions' **Mouse Desk**, and Harbor Software's **MouseFiler**—emulate the Mac interface with mouse- or keyboard-controlled pull-down menus.

Catalyst and Mouse Desk make your computer's screen look like the Macintosh Desktop, complete with icons such as a trash can for deleting programs and files. You can drag icons around the desktop or move them from window to window with a mouse or its keyboard equivalent.

In Catalyst, starting up a new program is as easy as double-clicking on that program's icon. In Mouse Desk, it's a snap to copy a file from one disk to another by clicking on and dragging that file's icon.

MouseFiler, by contrast, has windows and pull-down menus but few icons. In that, it resembles applications such as Mouse Word and Mouse Calc from Mouse Desk publisher International Solutions (see "The Magic of the Visual Interface," April 1986, p. 56).

As for hardware requirements, Catalyst and MouseFiler work only on //c's or enhanced //e's, while Mouse Desk

can get along on machines without mousetext. All require 128K and one disk drive, but are designed to shine with multiple ProDOS peripherals such as the UniDisk 3.5 and various hard disks and RAM disks. None requires a mouse, though most work better with one. Catalyst and MouseFiler can read the time and date from hardware clocks.

Catalyst: Most Like the Mac

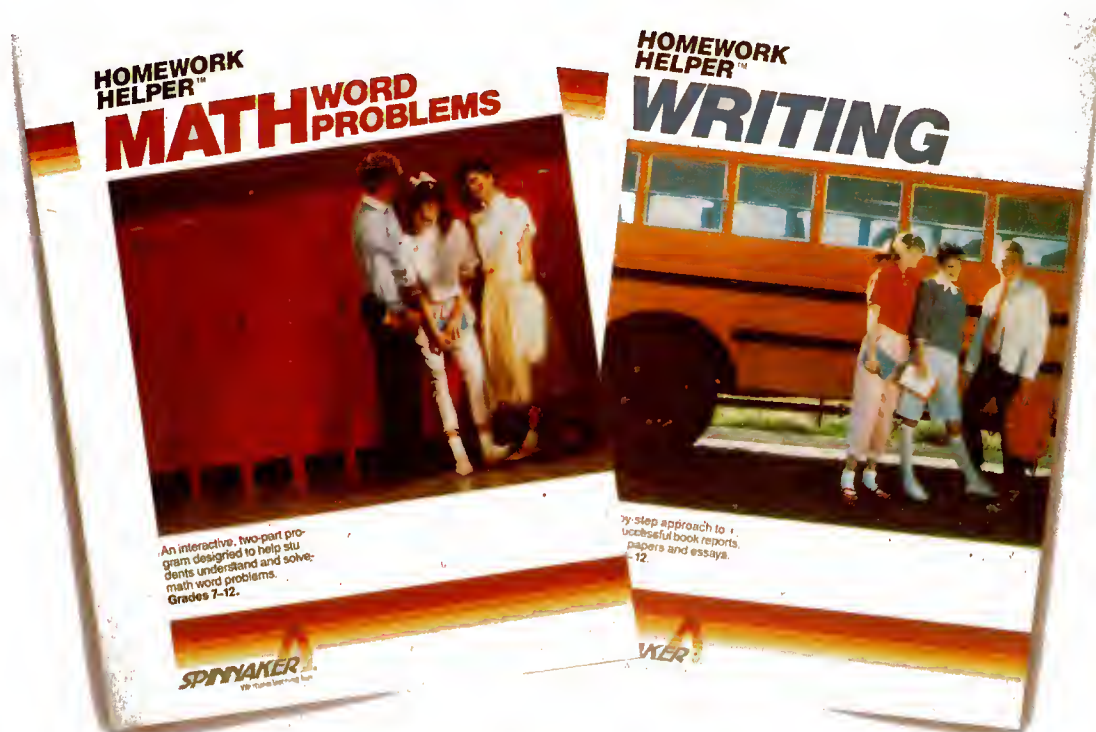
In certain respects, Catalyst is the Cadillac of the four programs reviewed here. It's the most expensive and requires a mass-storage device such as a UniDisk 3.5 or hard drive, but includes extras like MousePaint and an array of utilities (Apple's System Utilities, Quick Copy, Filer, and Backup II) as standard. There are even appealing if faddish features such as a Mac-style calculator, a puzzle, and a desktop that comes in a number of pleasing background patterns.

If your application programs are recognized by Catalyst or are noncopy-protected, you can use Catalyst to install them on your 3½-inch disk or hard disk. Depending on the applications you use, it's possible to start up your computer in the morning and not have to switch disks all day. For instance, you can install the Catalyst desktop, AppleWorks, and all Pinpoint accessories (including the Pinpoint Spelling Checker) on one microdisk. If you have an appropriately sized RAM disk, you can direct Catalyst to copy any program to it automatically at startup.

Program-oriented as it is, Catalyst is somewhat weak when it comes to file handling and similar housekeeping chores. If you use a UniDisk 3.5, performing a simple task such as copying files between disks requires that you leave the Catalyst desktop, temporarily abandoning the Mac interface and parking the mouse, to invoke the supplied Apple System Utilities.

Catalyst offers four pull-down menus: Apple, File, Edit, and Miscellaneous. The Apple menu contains some of the Catalyst goodies, such as the four-function calculator,

WHY AREN'T YOUR TEENAGERS GETTING BETTER GRADES?



98% of all the students we surveyed have trouble doing homework. The result: frustration, confusion and poor test grades.

The biggest problem areas? Kids say writing skills and math word problems. Now there's a solution. THE HOMEWORK HELPERS™ from Spinnaker will help eliminate these problem areas.

MIXTURE PROBLEMS

Ralph has \$1.20 in nickels and dimes. If he has six more dimes than nickels, how many of each type of coin does he have?

	Nickels	Dimes	Total
Price/Unit	5 cents	10 cents	
# of coins	X		
Value			\$1.20

DATA ENTRY: Represent the number of dimes in relation to the number of nickels.

MATH

MATH WORD PROBLEMS helps the student translate word problems into workable equations. A step-by-step tutorial uses a unique grid system for break-

ing word problems into manageable parts. And it shows students how any math word problem can be analyzed in a methodical way. There's even a built-in algebra calculator that removes the drudgery of doing tiresome calculations.

WRITING

WRITING helps the student define the goals of a writing assignment. By answering a series of questions posed by the computer, the student gets a quick and easy first draft. Then, the draft pops into the word processor, where the student edits it into a final essay or book report, spellchecks it, prints it out and hands it in.

Only hard work will get your teenagers straight A's in school. THE HOMEWORK HELPERS are a step in the right direction.

BOOK REPORT

CREATE IDEAS

What is the theme—the main idea—of *Great Expectations*? Type your answer.

Finding the theme sometimes takes a little digging.

Press **Ctrl** **H** for some common themes.

Some common themes are: the power of love, the triumph of persistence, the beauty of nature, greed intolerance, alienation, escape from conformity, the journey of life.

Available for: Apple II series, Commodore 64/128 and IBM PC/XT/AT. You can find HOMEWORK HELPERS at your local retailer or order direct from us. Call 1-800-826-0706. Illinois residents call 1-800-826-1330. Only MasterCard, VISA and American Express accepted for phone orders.



SPINNAKER • HAYDEN • TELARIUM • FISHER-PRICE • WINDHAM CLASSICS • UXB • BETTERWORKING • VIDEO

Spinnaker is a registered trademark of Spinnaker Software Corp. HOMEWORK HELPERS is a trademark of Spinnaker Software Corp. © 1985 Spinnaker Software Corp. • One Kendall Square • Cambridge, MA 02139

Table. Product ratings: program selectors compared.

	Catalyst	M. Desk	M.File
Ease of learning	■ ■ ■	■ ■ ■	■ ■ ■
Ease of use	■ ■ ■	■ ■ ■	■ ■ ■
Documentation	■ ■ ■	■ ■	■ ■
Support	■ ■	■ ■ ■	■ ■ ■
Overall	■ ■ ■	■ ■ ■	■ ■ ■

clock, desktop appearance, and puzzle.

The File menu has an assortment of seemingly disparate offerings. You can Get Info about a program here, or Open an icon to start a program without a mouse. If you're averse to pushing the little button on your UniDisk 3.5, you can click on Eject in the File menu, or Quit the program altogether.

The choices in Catalyst's Edit menu (Undo, Cut, Copy, Paste, Clear, Show Clipboard) are largely unavailable. The manual states that these items are activated by "separate desk-accessory products." Undaunted by a continuous busy signal, I dialed (and let my phone redial and redial) Quark's technical-support number. When I finally got through, a spokesman told me there are no such products.

The Miscellaneous menu presents some convenient options for mouseless users. Instead of dragging disk icons or using the trash can, you can Copy or Delete programs or Discard disks via menu choices. Other Miscellaneous choices let you show or hide the RAM-disk icon (if you have a RAM disk) or bring a floppy-disk icon to the screen if you insert a new program disk into a 5¼-inch drive.

Catalyst has a flexible, full-spectrum user interface; you can use it exclusively with the mouse or exclusively without one. Either way, you can avoid the pull-down menus by learning a few mostly mnemonic control-key and apple-key commands.

The Catalyst manual is thorough and well designed. A table of contents, glossary, and index make finding information easy. There are separate chapters for mouse and mouseless operation and a whole chapter devoted to disk management, covering 5¼-inch, 3½-inch, hard, and RAM disks.

While it excels at installing copyable programs, Catalyst itself is the only copy-protected program of the four tested. A free backup is provided, however.

Mouse Desk: Variation on a Theme

Where Catalyst is program-oriented, Mouse Desk is file-oriented. Its windows show individual file (or subdirectory) icons, not program icons. As a result, windows containing many files can seem overwhelmingly cluttered; you may have to scroll through two or more screens to see all the files listed. To Mouse Desk's credit, however, you don't have to leave the program to perform routine chores like copying files or formatting disks.

Like Catalyst, Mouse Desk is very Mac-like. It features pull-down menus, expandable windows, dialog boxes, and disk, file, and trash-can icons. A Show menu lets you display files by icon, name, date, size, or type.

You can install unprotected software by transferring program files to 3½-inch or hard disks. The latest versions of Mouse Word and Mouse Calc are two such programs that can reside along with Mouse Desk on one microfloppy.

Selecting and running either of these programs is as simple as pulling down the Run menu and clicking on the desired entry.

This setup is especially convenient if you're looking for an alternative to AppleWorks, because the Mouse Series is integrated.

Like Catalyst, Mouse Desk offers mnemonic apple-key commands to help speed things for mice and typists alike. A Keyboard menu helps mouseless users make selections, move elevators, and manipulate windows more easily.

The Check menu lets Mouse Desk ascertain the status of connected drives. If you want to leave Mouse Desk and work on a program that's not on the Run list, pull down the Boot menu and click on the Slot 5 or Slot 6 listing.

The original Mouse Desk manual was incomplete and contained editorial errors. At this writing, a new manual that promises to be much better is in the works.

MouseFiler: A Desktop Bargain

If you're looking for a Mac-like disk-file manager at a very reasonable price, look no further. MouseFiler's six

RunRun: Pinpoint Meets Programs

As Cynthia Field finished this review, *inCider* received a prerelease copy of a fourth ProDOS program selector: RunRun, a new entry from Pinpoint Publishing (5901 Christie Avenue, Emeryville, CA 94608). Like MouseFiler, RunRun uses mouse-text characters (but no icons) and requires a //c or 128K enhanced //e; it displays a Macintosh-style desktop with expandable, movable windows. It also appears to be aimed almost exclusively at users of Pinpoint's Desktop Accessories package.

In addition to a disk-catalog window showing files by name, type, size, or date, RunRun (\$49) features an applications window listing your executable programs (you install programs by specifying their on-screen titles and on-disk paths and filenames). There are two pull-down menus, opened with the escape key. The File menu lets you select a floppy, hard, or RAM disk, sort the catalog, or run, install, or uninstall an application. RunRun doesn't offer mouse control, and (at least in the prototype version) has no file- or disk-handling commands such as copying or formatting.

Instead, there's the Accessories menu, a list of Pinpoint utilities such as the notepad, appointment calendar, phone dialer, and filer (for some of the ProDOS functions omitted from the main program). The advantage of RunRun, and the reason for its name, is its ability to run one accessory from within another. For example, after opening Pinpoint's notepad from the RunRun desktop, you can call the solid apple-P Pinpoint menu and load the calculator.

This convenience, and the customizable applications window for users interested in setting up their own menu-driven hard-disk or UniDisk 3.5 systems, seem to be RunRun's main attractions. We'll keep an eye on it, and the legions of other new products Pinpoint plans, as production copies become available. □

—Eric Grevstad

WILL \$40 GET YOUR KID INTO HARVARD?

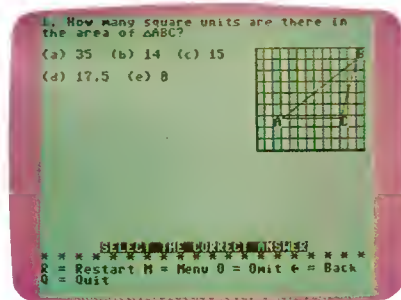
**PROBABLY NOT.
BUT IT WILL
IMPROVE SAT
SCORES.**

The SAT is an exam. And like all exams, it can be studied for. The best prepared students get the best scores and go to the best colleges. We'd like to help your children get the scores they deserve.

"Preparation courses improve SAT scores."

*Educational Testing Service,
creators of the SAT, quoted in USA TODAY*

The HAYDEN SCORE IMPROVEMENT SYSTEM for the SAT provides students with a framework for approaching the exam. The program uses a unique system that customizes instruction for each student. Your children are unique, and the Hayden course will treat them as individuals.



Available for: Apple II series, Apple Macintosh, Commodore 64/128 and IBM PC computers. You can find the HAYDEN SCORE IMPROVEMENT SYSTEM for the SAT at your local retailer or order direct from us. Call 1-800-826-0706. Illinois residents call 1-800-826-1330. Only MasterCard, VISA and American Express accepted for phone orders.

*The Macintosh version is priced higher than \$40.



"The most complete set of explanations we've seen on-screen."

Family Computing Magazine

Unlike other SAT preparation programs, the HAYDEN SCORE IMPROVEMENT System is entirely self-contained. There are no books to buy, no manuals to read, and no courses to take. The exclusive on-screen tutoring feature takes a student through a problem step-by-step, highlighting which steps should be taken to arrive at the right answer.



"The Hayden Score Improvement System will improve the average students' score by 97 points."

From a study at the University of Texas

Hayden has created more than an SAT program. The HAYDEN SCORE IMPROVEMENT SYSTEM covers every aspect of the exam and actually increases students' test scores. It begins with a Sample Test module which simulates an entire exam, and gives the student a score based on the standard 800 point scale. Using the data from the pre-test, the program automatically customizes the instruction for each student. And the Math and Verbal Modules include in-depth coverage of every section of the SAT exam.

Each of the three modules has sold separately for \$40. Now, the HAYDEN SCORE IMPROVEMENT SYSTEM, which contains all three modules, is available for \$40.* Isn't a better score on the SAT worth \$40?



HAYDEN • SPINNAKER • TELARIUM • FISHER-PRICE • WINDHAM CLASSICS • UXB • BETTERWORKING • VIDEO

SAT is a trademark of the College Entrance Examination Board. The materials in this product were developed by Arrow Instructional Systems, Inc. for Hayden Software, which bears sole responsibility for the content. © 1987 Arrow Instructional Systems, Inc., Cambridge, MA 02142.

FREE SOFTWARE FROM SPINNAKER

BUY 3 FROM THE SPINNAKER CATALOG AND GET 1 FREE!

Buy any combination of three titles listed in THE SPINNAKER CATALOG between October 1, 1986 and January 31, 1987. Then just mail in your proofs-of-purchase,* \$3.50 for shipping and handling, and the official "FREE SOFTWARE FROM SPINNAKER" coupon and we'll send you a software product of your choice free. *That's all there is to it.*

If you can't find a participating dealer, you can order direct from us by telephone or mail. Just call toll-free 800-826-0706. In Illinois call 800-826-1330. Have your Visa, MasterCard or American Express number ready.

In case your participating dealer runs out of "FREE SOFTWARE FROM SPINNAKER COUPONS", use this coupon.

FREE SOFTWARE FROM SPINNAKER COUPON

To receive your free product, this coupon must be filled out completely and sent to Spinnaker along with proof-of-purchase* and \$3.50 for shipping and handling.

Please print.

Free Product Chosen: _____

Computer model: _____

Only products listed in THE SPINNAKER CATALOG are available for this promotion. No substitutions will be accepted.

Titles purchased

1. _____

2. _____

3. _____

Name _____

Address _____

City _____ State _____ Zip _____

Phone () _____

*Proofs-of-purchase: Send the following two items: 1) Dated cash register receipt showing the products you purchased. Photocopies of the receipt(s) are accepted. Receipts must be dated between October 1, 1986 and January 31, 1987. 2) Proof-of-purchase tab from each product or the product letter code found on the back cover of the product manual. Photocopies not accepted.

Send these two items and \$3.50 for shipping and handling, along with this coupon to: FREE SOFTWARE FROM SPINNAKER, Spinnaker Software Corp., One Kendall Square, Cambridge, MA 02139. Offer expires January 31, 1987.

Allow 6-8 weeks for delivery of your free software product.

SPINNAKER

One Kendall Square • Cambridge, MA 02139

SPINNAKER

One Kendall Square • Cambridge, MA 02139

SPINNAKER • HAYDEN • TELARIUM • FISHER-PRICE • WINDHAM CLASSICS • UXB • BETTERWORKING • VII

pull-down menus contain most of the disk-maintenance options you're likely to want.

File and Volume commands are listed in separate menus. Using the former menu, you can open a file and display its contents in ASCII or hexadecimal format; copy, paste, delete, rename, and compare files; or create, list, copy, or delete directories. The Volume menu offers options for listing, formatting, copying, renaming, and comparing disk volumes. MouseFiler determines block allocation and tests for bad blocks.

On-line volumes appear in a special window listing volume names and locations. Clicking on a volume opens it; double-clicking opens a directory window listing files by icon, name, and type (MouseFiler recognizes more than a dozen file types, including the three AppleWorks applications). Disk swaps, by the way, are not automatically recognized; when you change disks, you have to click on the Volume List option in the Volume menu.

A decidedly strong file-management program, MouseFiler is understandably less adept at program selection. To boot an application program, you highlight the volume name, open its directory, click on a system file, move to the Apple menu, and select Exit to Program.

MouseFiler works well and is easy to learn, though I would like to see some improvement in error handling. I purposely asked the program to format a disk in slot 6, drive 2, a drive not attached to my //c. Instead of a "Can't find device" message, I was told, "Disk is write-protected."

When I wanted to format a microfloppy in my UniDisk 3.5 (slot 5, drive 1), an inexplicit message warned, "You are about to format a big disk. Do you really want to do this?" Once you consent and type in the disk's name, the formatting begins—with no warning if the target disk already contains data! Programs usually ask if it's "OK to Destroy" a preformatted volume.

Despite these complaints, I like MouseFiler. It's an unpretentious program that does what it claims to do, with an adequate manual and no copy protection. The manual says this last point is "for your protection." This refreshing attitude makes me think that maybe MouseFiler's developers are consumers, too.

At \$39.95, MouseFiler is an excellent investment. It can be installed on mass-storage devices using Catalyst. Such a configuration eliminates the need to leave the Catalyst desktop to use Apple's System Utilities, as MouseFiler easily substitutes for all except modem and printer utilities. With a Catalyst/MouseFiler partnership, you'll probably never have to abandon the Mac metaphor and leave your mouse idle.

Different Strokes

None of the programs reviewed here is perfect in every way. Neither are software reviewers or Apple II users, so several satisfying matchups are possible.

If you want a Mac-like program selector, Catalyst is tops. If you have a lot of file-management chores and like the Mac environment, MouseFiler is an excellent buy. If integrated software is a high priority or if you have an unenhanced //e, Mouse Desk and the accompanying Mouse Series programs are a good choice. ■

Write to Cynthia Field at 10 Border Avenue, Wakefield, RI 02879.

Product Information

Catalyst 3.0

Quark
2525 West Evans
Suite 220
Denver, CO 80219-5554
(303) 934-2211
\$99

//c or enhanced //e

Reader Service Number 300

Editor's note: International Solutions, U.S. distributor of Version Soft's Mouse Desk, went out of business at press time. According to Bill Cleary, International Solutions board member and vice president of marketing for Activision, several companies including Activision were negotiating to take over Mouse Series sales; inCider will publish the new distributor when one is named.

MouseFiler 1.1

Harbor Software
403 Great Road #8
Acton, MA 01720
(617) 263-1870
\$39.95

//c or enhanced //e

Reader Service Number 301

Mouse Desk 1.02

International Solutions
Distributor unknown
at press time;
see your dealer
\$69.95

//c or 128K //e

TIMEPRO/PLUS™ PUTS THE TIME AND DATE RIGHT WHERE YOU NEED THEM...

IN YOUR APPLEWORKS LETTERS, REPORTS, SPREADSHEETS, MAILING LISTS...

Now when you print documents you can have the current date and time inserted and printed automatically, right where you want it. No other clock card offers this feature. And there's more!

- Completely compatible with ProDOS, DOS 3.3, and AppleWorks. (Even time/date stamps DOS 3.3 files.)
- Always accurate, even through leap years.
- Displays the time and date on AppleWorks screens and files.
- Inserts current date/time into your printed AppleWorks documents.
- Works in any slot, including slot 3.
- Provides four interrupt rates (1 msec - 1 hr.).
- Automatically emulates other clocks, including Thunderclock™ and Timemaster™.
- Complete with utility software (double-sided disk).
- Optional BSR option for controlling lights and appliances, \$29.95.

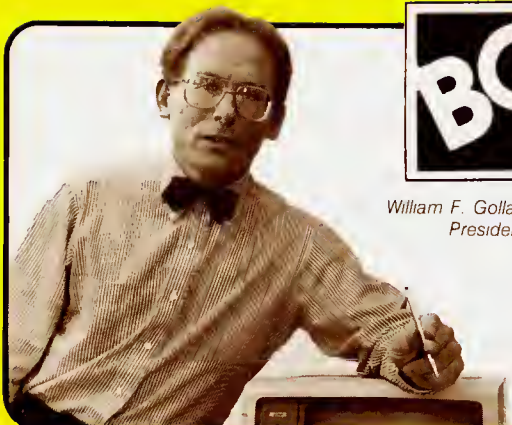
Order TimePro/Plus direct from
RC SYSTEMS for only \$109.95. Call today, or write to:

RC SYSTEMS
INCORPORATED

121 W Winesap Rd
Bothell WA 98012
(206) 672-6909

TimePro/Plus is a trademark of RC SYSTEMS, INC. Thunderclock is a trademark of Thunderware, Inc. Timemaster is a trademark of Applied Engineering.

Circle 212 on Reader Service Card.



William F. Gollan
President

BUSINESS COMPUTERS

OF PETERBOROUGH Gollan Co., Inc.

Upper Union St. P.O. Box 94
W. Peterborough, NH 03468-0094

**"One price...
and that's**

MODEMS

D.C. Hayes	
Micro Modem IIe w/sw	139.95
Smart 1200	364.95
Smart Modem 2400	579.95
Prometheus	
Pro 300 IIc w/sw	99.95
Pro 1200	279.95
Pro 1200 A w/sw	229.95
US Robotics	
Password 1200	204.95
Courier 2400	399.95

PERIPHERALS

Amdek	
Color 600 RGB	404.95
Apple	
II E's & II C's & Macs	CALL
Applied Engineering	
All Products	CALL
AST	
Megaram + w/64k	129.95
Megaram + w/256k	184.95
Sprint Disk w/256k	194.95
Sprint Disk w/512k	274.95
Checkmate Tech	
Multiram II E 64K + 80	124.95
Multiram II E 256K + 80	154.95
Multiram II E 512K + 80	184.95
Multiram II E 768K + 80	234.95
Multiram II E 64K RGB + 80	224.95
Multiram II E 512K RGB + 80	284.95
Multiram II E 1024K RGB + 80	459.95
Multiram II CX w/256K	154.95
Multiram II CX w/512K	189.95
Multiram CX 16 + w/1024k	529.95
Multiram II CX16 w/256	259.95
Multiram II CX16 w/512	279.95
Multiram CX + w/1024k	429.95
Multiram CX + Piggy w/512k	249.95
Central Point	
Laser 128 Products	CALL
Wcard	74.95
Curtis	
Diamond	34.95
Emerald	40.95
Ruby	59.95
Uni Printer Stand	17.95
Disks	
BASF SS/DD	14.95
Maxell MD1 SS/DD	14.95
Memorex 3.5"	29.95
Memorex SS/DD	17.95
3m SS/DD	14.95
Verbatim Bonus SS/DD	13.95
Verbatim Datalife SS/DD	18.95
Kensington	
System Saver	64.95
Koala Technologies	
Koala Pad +	77.95
Joysticks	
Kraft	35.95
Kraft Quickstick	54.95
Hayes Mach III's	35.95

GRAPHIC INTERFACES

Orange Micro	
Grappier + w/64k	75.95
Grappier + w/64k	149.95
Grappier + RS-232C	75.95
Grappier C	79.95
Hot Link IIc	50.95
Image Buffer II w/64k	74.95
Textprint	
Print It	129.95

GRAPHIC INTERFACES

Thirdware	
Fingerprint +	94.95
Fingerprint + IIC	94.95
Fingerprint G +	64.95
Fingerprint SS	64.95

PRINTERS

Apple *	
Imagewriter II 10"	CALL
Citizen	
MSP 120D (120 cps) 10"	199.95
MSP 10 (160 cps) 10"	299.95
MSP 20 (200 cps) 10"	339.95
MSP 15 (160 cps) 15"	399.95
MSP 25 (200 cps) 15"	499.95
MSP 35 Daisywheel (35 cps) 15"	489.95
Epson America	
All Products	CALL
Okidata	
ML 192 + (200 cps) 10"	374.95
ML 193 + (200 cps) 15"	544.95
ML 292 (200 cps 24 pin) 10"	509.95
ML 293 (200 cps 24 pin) 15"	639.95
Silver Reed	
Exp 550 Daisywheel (20 cps)	299.95
Exp 800 Daisywheel (40 cps)	659.95

BUSINESS SOFTWARE

ALS	
Spellworks	33.95
Apple	
Appleworks	199.95
Arrays	
Home Accountant	49.95
Tax Advantage	44.95
BPI Software	
AR, GL, PR, AP, IC (ea)	219.95
Prodos Versions (ea)	224.95
Broderbund/Bankstreet	
Filer, Mailer, Writer, Speller (ea)	45.95
Compuserve	
Subscription Kit	26.95
Howardsoft	
RE Analyzer III	199.95
Intuit	
Quicken	54.95
Living Videotext	
Think Tank	83.95
MegaHaus/Works Series	
Mega, Report, Think (ea)	71.95
Microsoft	
Multipian	61.95
Monogram	
Dollars & Cents II, III + (ea)	72.95
Forecast	40.95
PBI	
CommWorks	CALL
Graphworks	49.95
JEEVES	34.95
Quark	
Catalyst, Word Juggler 3.0 (ea)	62.95
Roger Wagner	
Mouse Write (new)	99.95
Write Choice	31.95
Sensible Software	
Sensible Grammar	58.95
Speller IV, Graph, Dpt., Bookends (ea)	71.95
Sierra On Line	
Homeward +	46.95
Home Word Filer	46.95
Screenwriter Pro	80.95
Software Publishing	
PFS:WR, GR RP, PL (ea)	75.95
PFS:File/Report	85.95
Sorcim/IUS	
Super IIIA	107.95
SSI	
Word Perect	87.95
United Software	
ASCii Express	80.95

UTILITIES/LANGUAGES

Activision	
Kitchen's Game Maker	33.95
Baudville	
Actors & Actions	21.95
Business	33.95
Blazing Saddles	30.95
Take 1	37.95

UTILITIES/LANGUAGES

Beagle Brothers	
Alpha Plot, D-Code, Extra-K,	
Triple Dump (ea)	25.95
Apple Mech., Bag, Diskquick, Flex-	
Text, Font Mech., Frame-Up, IO	
Silver, Pronto Dos, Util. City (ea)	20.95
Basic, Big U., Dbl. Take, Fat Cat,	
Macro Works, Probyter (ea)	22.95
Graphics	35.95
DOS Boss	17.95
GPL E	30.95
Mini Pix #1	19.95
Power Sprint	17.95
Silicon Salad	17.95
Tip Disk #1	14.95
Typefaces	15.95
Borland International	
Turbo Game Works (Reg. cpm)	27.95
Turbo Pascal 3.0 (Reg. cpm)	44.95
Turbo Tool (Reg. cpm)	36.95
Turbo Tutor	26.95
Broderbund	
Animat	43.95
Dazzle Draw	39.95
Print Shop	32.95
Print Shop Companion	27.95
Print Shop GL 1,2,3 (ea)	18.95
Print Shop Refill Paper	17.95
Type	29.95
Central Point	
Copy II +	24.95
Data Transforms	
Fontrix	56.95
Font Set(s) (ea)	14.95
Funk	
Sideways	36.95
Microsoft	
Applesoft Compiler	107.95
Basic Compiler	244.95
Fortran-80	129.95
Mindscape	
Mister Pixel's	
Cartoon, Paint Set (ea)	25.95
Color Me (Main)	24.95
Hugge, Rainbow, Shirt &	
Tink Tonk (ea)	12.95
Polarware	
Complete Graph. Sys.	32.95
Graph. Magician Paint/Anim.	32.95
Graph. Magician Jr.	16.95
Pinpoint	
Document Checker	41.95
Infomerge	53.95
Modem Enh. Kit	22.95
Pinpoint (New)	59.95
Pinpoint Ram Exp.	22.95
Pinpoint Spellchecker	41.95
Pinpoint Toolkit	30.95
Point to Point	79.95
RunRun	30.95
Roger Wagner	
Merlin Assembler	43.95
Merlin Combo	70.95
Merlin Pro	61.95
Springboard	
Certificate Maker	35.95
Newsroom	35.95
Newsroom Clip Art V1	20.95
Newsroom Clip Art V2	24.95
Newsroom Graphic Exp V1	27.95

EDUCATIONAL/PERSONAL

Barrons	
Computer SAT	56.95
CBS	
Adventure Master	29.95
Body in Focus, Coast to Coast,	
Dinosaur Dig (ea)	28.95
Goren's Bridge	53.95
Mastering SAT	61.95
Success Series (ea)	25.95
Davidson Associates	
AlgeBlaster, Classmate, Mathblaster,	
Spell-It, Work Attack (ea)	30.95
Grammar Gremlin	CALL
Homeworker	CALL
Speed Reader II	41.95
Designware	
Body Trans., Europe Nations, States	
& Traits, Gram. Exam. (ea)	28.95
Remember	46.95
Spellcopter, Spellakazam (ea)	27.95

EDUCATIONAL/PERSONAL

Electronic Arts	
Cut & Paste	25.95
Financial Cookbook	35.95
Movie Maker	30.95
Fisher Price	
Alpha Build, Logic Levels, Up &	
Add-Em, Seaseller (ea)	19.95
Man-on-Moon, Jungle Reading, Peter R.-	
Reading, Peter W. Music (ea)	25.95
Harcourt Brace	
SAT	54.95
Hayden	
SAT Math, Verbal (ea)	38.95
Learning Company	
Addition Mag., Magic Spells, (ea)	25.95
Bumble Plot, Games, Reader Rabbit,	
Moptown Hotel, Parade (ea)	28.95
Gertrudes Secrets, Puzzle (ea)	30.95
Juggle's Rainbow	21.95
Robot Qdessey, Rocky's Boot (ea)	33.95
Meca	
Managing Your \$	111.95
Milliken	
Addition, Division (ea)	26.95
Word Processor	48.95
Mindscape	
Bank St. Story B.	30.95
Keyboard Cadet, Lusher Profile (ea)	28.95
Perfect Score	48.95
Pinpoint	
Add Menu's (ea)	14.95
Micro Cookbook	30.95
Random House	
Charlie Brown Series +	
All Products	24.95
Scarborough	
Boston Diet, Personal Net Worth (ea)	54.95
Figures & Formulas	21.95
Masterytype New, Filer (ea)	28.95
Run For \$, Song Writer (ea)	29.95
Writing Wizard	49.95
Simon & Schuster	
Chem Lab, Great Paper Air P. (ea)	28.95
JK Lasser's Mng.	51.95
Lovejoy's SAT	45.95
Make A Match	22.95
Math Buster	22.95
Typing Tutor III	35.95
Webster's Spelling Ck.	42.95
Spinnaker	
Adv. Creator, Trains, Sum Ducks,	
Counting Parade, Alpha, Zoo (ea)	23.95
BW File/Report, BW Spread., WP (ea)	40.95
Delta Drawing	27.95
Fraction Fever	20.95
Grandma's House	21.95
Homework Math/Word	29.95
Homework Writing	29.95
In Search of	24.95
Kids on Keys	19.95
Kid Writer	21.95
Kindercamp	19.95
Math Busters	23.95
Rhymes & Riddles	19.95
Snooper Trooper 1,2 (ea)	24.95
Story Machine	27.95
Springboard	
Early Games	23.95
Easy ABC, Mask Parade (ea)	28.95
Fraction Factory	22.95
Music Maestro	23.95
Piece Cake Math	23.95
Puzzle Master, Rainbow P.,	
Stickers (ea)	24.95
Timeworks	
Evelyn Word Reader	46.95
Silvia Porter's Planner	73.95
Swiftcalc w/Sideways	103.95
Xerox/Weekly Reader	
Sticky Bear Series (ea)	26.95

GAMES SOFTWARE

Access	
Beach-Head II	28.95
Accolade	
DamBusters, Fight N., Hard Ball, Laws	
of West, Psi 5, Sundog 2.0 (ea)	23.95
Activision	
Alcazar	27.95
Alter Ego	34.95
Borrowed Time	
Countdown to Shut.	27.95
Designer's Pencil	27.95

Apple's
NEW!
Machines
for Christmas
CALL!!

MasterCard

CALL TODAY—ORDERS ONLY 1-800-845-3003

"We'll support, service, and warranty everything we sell and stand behind it 100%."

Absolutely NO Additional Charges *

free freight... , in stock, my promise."

Member Better Business Bureau Seven Years



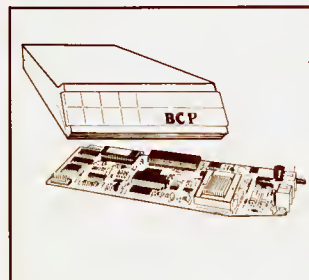
GAMES SOFTWARE

Ghostbuster's	27.95
Hacker	27.95
H.E.R.O.	27.95
Little CPU Disc.	27.95
Master Lamps	27.95
Mindshadow	27.95
Pitfall	27.95
Road Race	27.95
Rock N Bolt	27.95
Space Shuttle	27.95
Star Lge. Baseball	23.95
Tracer Sanction	27.95
Zenit	27.95
Avalon Hill	
Under Fire	38.95
Avant Garde	
Dave Winfield	27.95
Theisman's ProFootball	27.95
Blue Chip	
Barron, Millionaire, Squire, Tycoon (ea)	31.95
Broderbund	
Art of War	28.95
Captain Goodnight	24.95
Championship Lode R.	24.95
Fantavision	32.95
Karateka	24.95
Mask of Sun	27.95
Serpent's Star	28.95
Toy Shop	37.95
Where in the World	28.95
CBS	
Murder by Doz.	27.95
Datasoft	
Alternate Reality	30.95
Bruce Lee, Conan, Goonies, Mr Do, Zoro, Pooyan (ea)	26.95
Dallas Ovest	24.95
Dig Dug	21.95
Never Ending Story	27.95
2128 Baker St.	27.95
Electronic Art	
Adv. Const. Set	36.95
Age of Adv.	12.95
Amnesia	30.95
Archon	27.95
Archon II: Adept	28.95
Bard's Tale	32.95
Carrier's At War	35.95
Cavers Calisto	24.95
Chessmaster	28.95
Europe Ablaze	35.95
Golden Oldies	29.95
Lords Conquest	25.95
Mail Order Monster	CALL
Murder Zindernaul	19.95
Music Const. Set	29.95
1 on 1	28.95
Orge	35.95
Pinball Const. Set	26.95
Racing Dest. Set	CALL
Reach For Stars	32.95
Realm of Impossibility	CALL
7 Cities Gold	28.95
Sky Fox	28.95
Super G. Dash	12.95
Tim Leary	25.95
Wilderness	35.95
Wizard	32.95
Epyx	
Baseball	25.95
Destroyer, Champ Wrestling (ea)	29.95
Eidolon	29.95
Fax	20.95
Football	28.95
GI Joe	21.95
Koronis Rift	29.95
Mission Impossible	24.95
Pistop	28.95
Summer Games I,II (ea)	28.95
Temple Asphair	28.95
Winter Games	26.95
Hayden	
Sargon III	33.95
Infocom	
Cutthroats	26.95
Deadline	32.95
Enchanter	27.95
Footlights	29.95
Forbidden Ovest	28.95
Hitchhiker's G.	27.95
Infidel	29.95
Mind Voyaging	31.95
Planet Fall	27.95

GAMES SOFTWARE

Seastalker	27.95
Starcross	32.95
Sorcerer	29.95
Spell Breaker	33.95
Suspect	29.95
Suspendo	32.95
Wishbringer	28.95
Witness	27.95
Zork 1	27.95
Zork 2,3 (ea)	29.95
Micro Lge. Sports	
Baseball	28.95
Microprose	
Acro Jet	24.95
Conflict Vietnam	28.95
Crusade in Europe	28.95
Decision Desert	28.95
F-15 Strike	25.95
Gunship	25.95
NATO Commander	25.95
Silent Service	25.95
Solo Flight	25.95
Mindscape	
American Challenger	29.95
Deja Vu	39.95
D. Francois High Staker	32.95
Forbidden Castle	29.95
Halley Project	31.95
James Bond Gold F.	28.95
James Bond View K.	28.95
Racter	31.95
Rambo Part II	27.95
Stephen King Mist	28.95
Tinka's Mazes	22.95
Tinka's Sub. Fair	22.95
Tink's Adventure	22.95
Tonk in Buddy Bots	22.95
Tuk Goes Town	22.95
Voodoo Island	27.95
One Step	
Golf's Best Pinehurst	35.95
Golf's Best St. Andrew's Old	35.95
Origin	
Autoduel	41.95
Moebius	41.95
Ultima 3 & 4 (ea)	41.95
Polarware	
Coveted Mirror, Crimson Cr. (ea)	15.95
Oo-Otopos, Swords Kadesh, Xyphus (ea)	15.95
Sierra On Line	
Black Caldron	29.95
King's Quest I,II (ea)	34.95
Simon & Schuster	
Frogger 3 Deep	26.95
Spy Hunter	32.95
Super Zaxxon	26.95
Tapper	32.95
Sir Tech	
Rescue Raiders	27.95
Wizardry 1	31.95
Wizardry 2	25.95
Wizardry 3,4 (ea)	28.95
Wizprint	19.95
Spectrum	
Gato	25.95
Strategic Simulations	
Baltic 85	24.95
Battalion Commander	28.95
Battle Group	46.95
Battle Normandy	28.95
Broadsides	27.95
Carrier Force	39.95
Colonial Conquest	32.95
Computer Baseball	27.95
Field of Fire	32.95
Gemstone Warrior	24.95
Geopolitique 1990	28.95
Germany 85	39.95
Imperium Galactum	28.95
Kampfgruppe	39.95
Mission Crush 50	28.95
Nam	31.95
N. Atlantic 86	39.95
Panzer Grenadier	32.95
Phantasia II	32.95
Rails West	28.95
Reforger 88	39.95
Rings of Ziffin	32.95
USAAF	35.95
War in Russia	49.95
Sublogic	
Flight Simulator II	36.95

BCP Introduces OUR Superior Products...



MODEMS

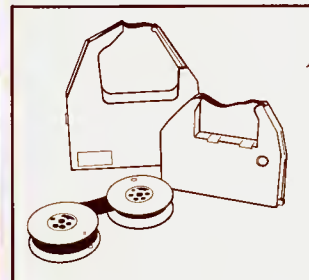
...unsurpassed reliability, unlimited tech support and a customer service department where you're always #1. The external models come with a 1 yr. warranty. The internal model includes software and a generous 2 yr.

warranty. So when it's time to buy a modem... Think BCP.

*JG1200 (External, 1200 baud, 1 yr. warranty) 179.95

*JG2400 (External, 2400 baud, 1 yr. warranty) 329.95

*PG1200A (Internal, 1200 baud, software, 2 yr. warranty) 179.95



RIBBONS

...vacuum sealed to preserve freshness and long life. All six packs come carefully packaged in a convenient container for easy storage. Stock up now, so next time you won't run out.

	Black	Colors
*Apple Imagewriter I/II	28.95	31.95
*Apple Imagewriter II Rainbow	—	46.95
*Apple Scribe	46.95	—
*Brother HR 15/35 MS	36.95	—
*Epson MX-FX/Citizen MSP 10"	28.95	31.95
*Epson MX-FX/Citizen MSP 15"	37.95	43.95
*Epson LX 80/90	31.95	37.95
*Epson LQ800/1000	33.95	38.95
*Okidata ML 82A, 92, 93	19.95	25.95
*Okidata ML 192, 193	44.95	47.95

Colors: GR, BR, PU, BL, RD, YL.

Customer Service (603) 924-9406

* Our Terms and Conditions

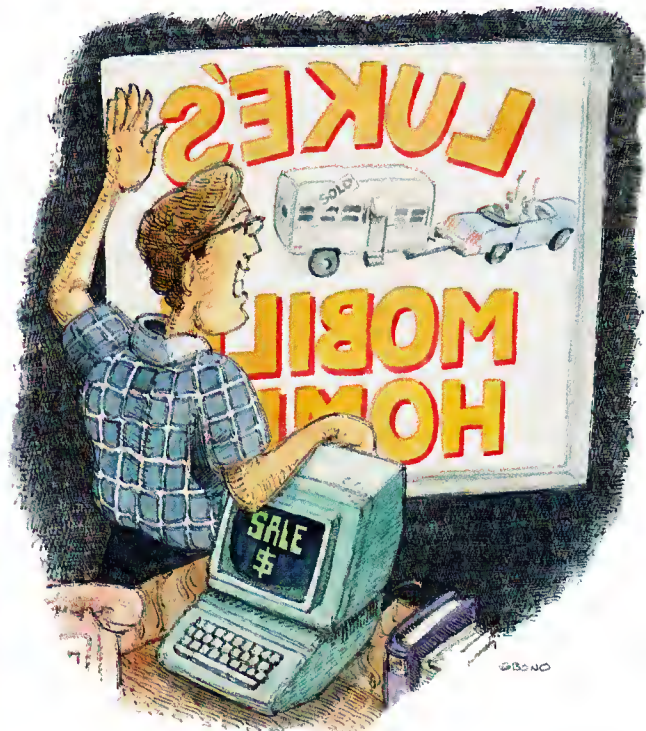
Shipping UPS Ground: FREE (Lower 48 only) • Credit Card Surcharge: 0% • Purchase Orders: FOB NH, Handling • APO/FPO: FOB NH & Handling • Prices & Availability Subject to Change

CALL TODAY—ORDERS ONLY 1-800-845-3003

VISA



When you're trying to organize your business and personal records, you can't beat data-base programs for information management. This month, inCider takes a look at the wide range of features and capabilities available in seven Apple II data-base systems.



WHAT DO THESE PEOPLE HAVE IN COMMON?

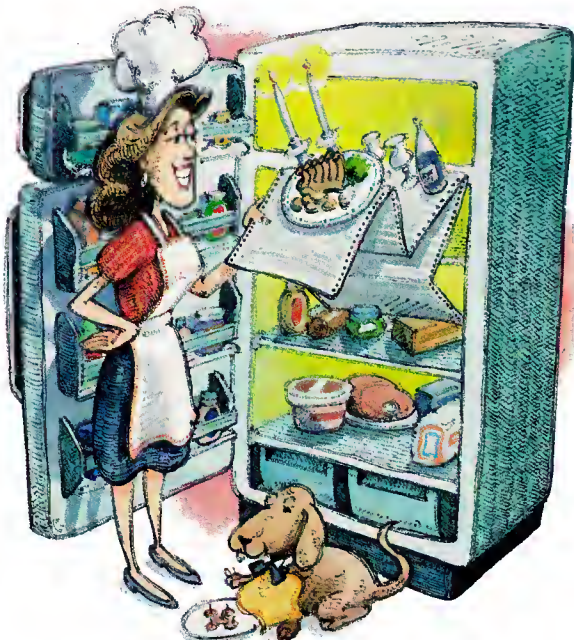
by Cynthia E. Field

Data bases are boring, right? Not to Luke McCollum, owner of Centennial Mobile Homes in Farmington, New Mexico. Luke's dealership is a one-man, million-dollar-a-year operation. He's taken on all management, sales, and clerical duties. Too much for one person to handle? Not if your assistant is an Apple II data-base program.

Let's take a look at seven data-base packages (see the accompanying Product Information sidebar and ratings **Table**) that can help you and your Apple save time and make money (maybe data bases aren't so boring after all).

What Is a Data Base, Anyway?

What computer enthusiasts sometimes loosely refer to as "data bases" are known formally as data-base management systems (DBMS's). The data base itself is the mass of information these programs store—like stamps in a collection.



According to Rick Minicucci, writing in *Today's Office* ("Database Management Systems: Keys That Unlock the Power of Data," July 1986), data-base management programs fall into three categories: single-file, intermediate, and relational.

The first type, represented by six of the seven programs surveyed in this article, can work only with information stored in a single file—like the U.S. Commemorative stamps you keep in a separate album. A single-file program can electronically rearrange your list of stamps or any information about them, such as number of perforations, presence of watermarks, and market value. You can physically remove all the commemoratives from your album, sort them by issue date, and reinsert them, but a DBMS performs these tricks much more quickly and in a more sophisticated way.

What happens if you decide to combine two albums into one, adding your Canadian commemoratives to those from the U.S.? In the physical world, you'd have to remove the stamps from each album and reinsert them into a larger one, labeled *North American Commemoratives*.

When you want to combine files or transfer information from one data-base file to another, an intermediate or relational DBMS can save you time and trouble—not to mention a lot of stamp hinges. If the files are similar in the type of information they hold, though, you may not need a high-powered DBMS: Most single-file DBMS's (of the seven reviewed here, all but Filer's Choice and Better-Working File & Report) can merge two files into one.

Nine to Five is the only one of the seven programs in this article that could be classified as an intermediate data base. An intermediate program goes beyond merging two separate files: You can merge selected information from one file into another. If, for example, you had a file of U.S. stamps and a file of stamps from other countries, you could select the North American stamps from the latter and merge them with the U.S. stamps.

What If I Don't Collect Stamps?

Most of us tend to be acquisitive—the closets, garages, and basements of America prove we're pack rats. You may not collect stamps or coins, but you probably have a growing book or compact-disc library.

How about the assorted slips of paper, index cards, and newspaper clippings in the kitchen drawer to which you facetiously refer as the "recipe file"? A computerized cookbook can give you a clean printout whenever you need one so that you don't have to read through aged Worcestershire sauce and grease stains. An electronic food file can suggest a meal you can whip up when the only items in your refrigerator are leftover liverwurst, day-old pizza, and clam juice of unknown vintage.

In a more serious vein, a growing family needs to keep track of health records, household inventory (in case of theft or fire), and tax information. Any DBMS, including the no-frills BetterWorking File & Report and Filer's Choice, can help you manage these mundane but vital affairs.

Can a Data-Base Program Help My Social Life?

It might be amusing to computerize your "little black book," but it probably wouldn't justify the price of DBMS software. Still....

In other ways, a DBMS can augment your enjoyment of the clubs and organizations to which you belong. Even your bowling league needs to keep track of who the club kingpin is and who leads in gutter balls. Some professional baseball teams, like the New York Yankees, keep track of player statistics on an Apple II (see "The Tenth Player," July 1986, p. 42). Little League and Babe Ruth League teams can do the same.

Have you ever been asked to organize a class reunion? Any DBMS can keep track of class members, addresses, and personal information. Some computerized filing programs, like ProFiler and Nine to Five, can even help you prepare personalized form letters telling each member about planned reunion activities.

About a year ago, Richard Ethier, an electrician from Narragansett, Rhode Island, purchased an Apple IIc. Before he could say "Space Invaders," the Rhode Island chapter of the Disabled Veterans of America elected him adjutant—which meant he was corralled into setting up a data base of the group's approximately 220 members. He used Bank Street Filer to do the job.

According to Richard, "If you're not a typist, entering all this information is a monumental job—but it's worth it in the end."

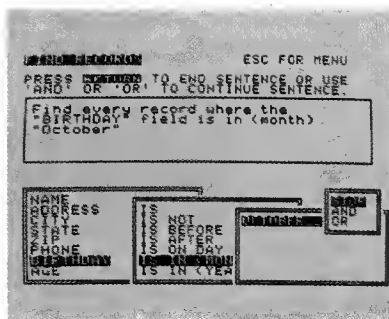
How Can a Data-Base Program Make Money for Me?

Some businesses such as Dow Jones, The Source, and CompuServe make money by selling the information in their data bases. Unless you have hard-to-come-by, proprietary, or particularly valuable information, you probably won't be able to market yours.

How you use your data base can help you improve profits, though. Whether your business is small or conglomerate-sized, DBMS's help you organize information and make better decisions. The improvement you see in your bottom line is an indirect measure of your success.

Cynthia Villari and Sister Catherine Fazzina have only recently begun computerizing the Rolfe Square Counseling Center in Cranston, Rhode Island. Their business sponsors seminars and provides professional counseling services for children, adults, and couples.

In the past, Sister Catherine used her typewriter and a stack of envelopes whenever she wanted to send announcements to professionals, paraprofessionals, and lay people on the Center's mailing list. Just when things began to get unwieldy—the mailing list has grown to 550—Sister Catherine discovered what an Apple IIe and PFS:File could do for the Center: She's added codes to



Bank Street Filer: Easy, flexible, capable, with a natural-language interface.

each person's record so that she can generate labels for a select list of associates.

Having used an older, DOS 3.3 version of PFS:File, Sister Catherine is ready to switch to the more powerful, current ProDOS version, which comes bundled with PFS:Report. (She plans to have the program automatically sort by zip code to take advantage of bulk-mail rates.) And Sister Catherine won't have to retype her data base to change from DOS to ProDOS: Software Publishing provides a free utility program, PFS:Convert, that takes care of that task.

Whether you sell a service, as the Rolfe Square Counseling Center does, or a product, a DBMS can help you find customers, handle their needs, and keep them coming back.

Luke McCollum, the mobile-home dealer in New Mexico, uses Nine to Five to prospect—for the "gold" that's already in people's pockets.

If you're not on enough mailing lists, stop in and visit Luke—he'll gladly add you to his. He can use his 300-baud Apple modem to call the credit bureau's data base to "pre-qualify" you, too.

If you seem a likely candidate for a mobile home, Lu will follow up your visit with a phone call or letter. If you buy, Luke's Apple IIe will generate a contract and transfer you from the "Prospect" file to the "Customer" file. Luke's data-base program is among the friendliest—it can even remind him to send you a birthday card!

Nine to Five, the Program

Unlike the other six programs described in this article, Nine to Five can perform all these tasks—and more—without integrating with another product. With flexible, easy-to-use features, Nine to Five is really three programs in one. Besides the filing system, a report generator and word processor are built in.

Probably anything you want to do with a data base you can do with Nine to Five. Creating, printing, and storing employee wage and salary records are a snap. It's just as easy to send personalized letters to delinquent members of your condominium association to let them know how much they're in arrears.

Like all data-base programs described in this article, Nine to Five can perform calculations on information contained in data-base records. Unlike the others, Nine to Five can even "calculate" text, a feature known as *text concatenation*, through which information you've entered in "First Name" and "Last Name" categories, for instance, is "added" together so that the whole name is displayed in reports and letters.

Nine to Five is particularly well suited for business, especially sales operations. The program's "conditional paragraphing" feature lets you write a form letter, then go into the data base and select the specific clients you want to

VIP Professional™

The New Generation Spreadsheet For the New Generation Apple® IIe & IIc

IIcS version
now available

Professional Power

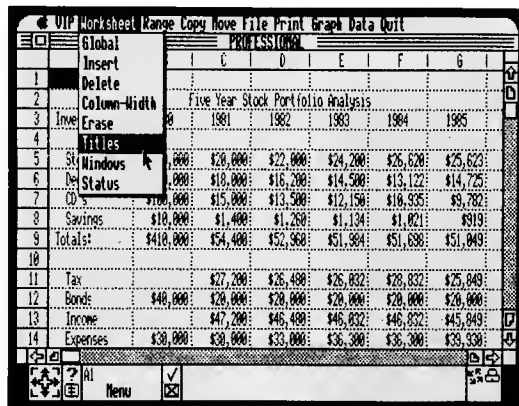
There's an all new Apple II, an Apple II with almost unlimited memory and almost unlimited power—even a new sixteen-bit CPU.* And a REAL Macintosh™ style interface is no longer just a dream. It's a mouse click away!

VIP Professional is an all-new program made possible by the new II, and designed specifically for it. Professional brings to the Apple II the most popular, most powerful spreadsheet for any computer—Lotus 1-2-3™ version 1A. But to the integrated spreadsheet, database and graphics of 1-2-3, Professional adds a full-blown Mac-style interface.

Works Great in 8 & 16 Bit

VIP Professional not only has the same commands and features as 1-2-3, you can also type the same keys to do the same things. Lotus files can be read and written, and all functions can be used, including the powerful macros.

But Professional goes beyond Lotus, making it oh so easy to use—and even more powerful. Pull-down menus, dialogue boxes, mouse ranging, scads of icons, scroll bars, column "grabbers", grids—everything you need for ease of use, everything Lotus lacks. Plus, Professional adds things that were left out of Lotus, like a giant 8,192 row by 256 column spreadsheet, and the ability to use up to four megabytes of memory.



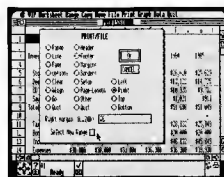
lets you automate your spreadsheet for specific tasks such as classroom exercises, experiments, or business applications such as accounting.

Of course you get variable column width, split screens, frozen titles, sorting, data query, file combine and extract, copy, move, range naming, justification for doing business form letters, statistical analysis, a full range of numerical formatting, engineering graphics precision, local and global protection of cells, header and footer control. In short,

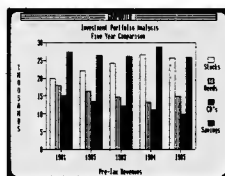
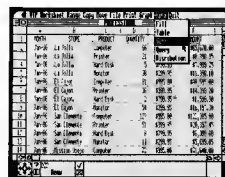
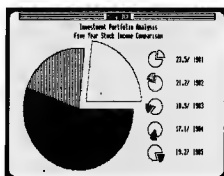
Professional matches the power of any spreadsheet for any computer!

Just Minutes to Learn

Professional comes with a user-sensitive tutorial for the newcomer. And help is built right into the program. With the handy tutorial you will be able to create your first worksheets in just minutes.



Do your finances, keep your inventory, graph your sales and a whole lot more.



No Other Spreadsheet Compares

Feature	VIP	SuperCalc3™	Mouse Calc™	AppleWorks™
Sheet Size	256x8192	63x256	63x254	153x999
Usable Memory	4 Meg	500K	42K	61K
Lotus Spreadsheet	Yes	No	No	No
Lotus Database	Yes	No	No	No
Lotus Graphs	Yes	No	No	No
Lotus Macros	Yes	No	No	No
Uses Lotus Files	Yes	No	No	No
Uses Mouse	Yes	No	Yes	No
Uses Icons	Yes	No	No	No
Math Functions	51	49	24	13
Fast Natural Recalc	Yes	No	No	No
Speed	Fast	Fast	Slow	Fast
Supports 16-Bit*	Yes	No	No	No

*Works with but does not require Checkmate and Applied Engineering 16-bit boards.

VIP Professional is a trademark of VIP Technologies Corp.; Apple is a registered trademark of Apple Computer, Inc.; Macintosh is a trademark of McIntosh Laboratory, Inc. used with express permission; AppleWorks, ProDOS, and Expanded Memory Card are trademarks of Apple Computer, Inc.; SuperCalc3 is a trademark of Sorcim/US; Mouse Calc is a trademark of Version Software; Lotus and 1-2-3 are trademarks of Lotus Development Corp.; RamWorks, Z-RAM & TransWarp are trademarks of Applied Engineering; SprintDisk is a trademark of AST Research, Inc.; MultiRam is a trademark of Checkmate Technology.

Copyright © 1986 VIP Technologies Corporation.

ISD Marketing, Inc. (416) 479-1880
20 Steelbase Road, Unit 12
Markham, Ont. L3R 1B2



Get the Power of 1-2-3 for only



IIe, IIc
\$249.95

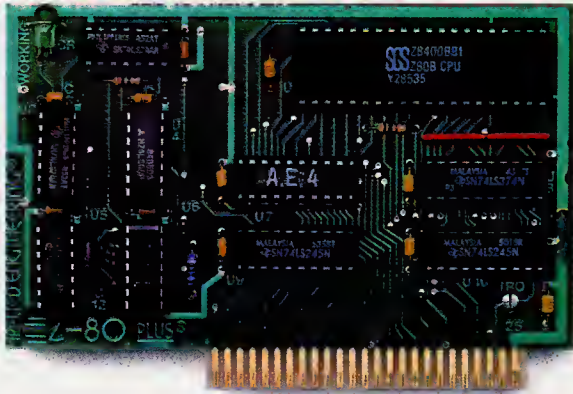
Enhanced IIcS Version
\$299.95

If Your Dealer is Out of Stock, Order Direct

Send your check or money order, together with \$3 for shipping and handling. CA residents add 6% sales tax. Orders by personal check are held for three weeks for the check to clear. COD's and purchase orders not accepted. All prices subject to change without notice.

SYSTEM REQUIREMENTS: Enhanced Apple IIe or IIc with at least 256K; Uses ProDOS; Can be used with popular hard disks; Works with MultiRam, RamWorksII & Z-RAM; Apple Memory Expansion Card and AST SprintDisk only work if other memory card added; Mouse and second drive recommended; Double hi-res required; Color monitor required for color features; Uses 16-bit boards with 65C816; Compatible with TransWarp speedup card; To be used, Lotus .WKS files must be transferred to ProDOS diskettes with a communications program.

With Z-80 Plus, run CP/M—the largest body of software in existence.



*Now, get two computers
in one, and all the
advantages of both.*

Enter the CP/M world with the new Z-80 Plus card from Applied Engineering, and introduce your Apple IIe® or II+® to the thousands of CP/M programs. Only the Z-80 Plus comes standard with the new 5.0 software, the most advanced system ever for running CP/M programs.

The new 5.0 boasts advanced features like built-in disk emulation for popular memory expansion boards, boosting both system speed and storage capacity. And menu-driven utilities that let you get to work faster. The Z-80 Plus also lets you run older CP/M programs—all the way down to Version 1.6 (2.2 is the most popular).

The Z-80 Plus is the only card on the market capable of accessing more than 64K. If you have an extended 80-column card, all 128K is usable. And if you have RamWorks, RamFactor, or an Apple memory card, up to 1088K is available.

Each Z-80 Plus comes with our CP/M Ram Drive software, enabling an extended 80-column card, RamWorks card or other standard memory card to work as a high-speed Ram disk which runs CP/M software up to *twenty times faster*. So packages like WordStar and dBASE II run at blinding speed.

Simply plug the Z-80 Plus into any slot in your Apple. You'll get the benefits of two computers in one—all at an unbelievably low price (only \$139!).

- Fully compatible with ALL CP/M software
- Fully compatible with most hard disks, including Corvus and the Sider
- Fully compatible with Microsoft disks (no pre-boot required)
- Specifically designed for high speed operation in the Apple IIe (runs just as fast in the Apple II+ and Franklin)
- Runs WordStar, dBASE II, Turbo Pascal, and ALL other CP/M software with *no pre-boot*
- Semi-custom I.C. and low parts count allows Z-80 Plus to fly through CP/M programs with extremely low power consumption (we use the Z-80B)
- Does EVERYTHING other Z-80 boards do, *plus* Z-80 interrupts
- Five-year warranty

Call today for more information or to order, 9 a.m. to 11 p.m. seven days, or send check or money order to Applied Engineering, MasterCard, VISA and C.O.D. welcome. Texas residents add 5½% sales tax. Add \$10.00 outside U.S.A.

AE Applied Engineering
P.O. Box 798, Carrollton, TX 75006
(214) 241-6060

CPM is a registered trademark of Digital Research.

receive the letter (for example, customers who are two or more months behind in their payments).

Most programs for the Apple II come in one version, but Nine to Five is custom-tailored to your hardware. The basic edition requires 128K and two floppy drives. Other versions are available for hard-disk drive and UniDisk 3.5 systems. (According to the company, Nine to Five isn't written in ProDOS, but still supports the UniDisk 3.5: An alternate disk-operating system called DOS 3.5 allows the partitioning of a UniDisk 3.5 disk into two DOS volumes.)

Some versions, like Luke McCollum's, require 512K or even 1 megabyte of RAM expansion. Cards recommended by Nine to Five include Apple's Memory Expansion board, Applied Engineering's RamWorks series, and Legend Industries' E' Card (see "Two Roads to Memory Expansion," August 1986, p. 46, for a discussion of Apple II RAM expansion). The frequent disk-drive access the 128K version of Nine to Five requires also warrants an accelerator card, such as Applied Engineering's TransWarp.

Nine to Five has the worst—and at the same time the best—support program I know. First, Nine to Five is copy-protected (a backup is free and is included in the package). While the company's policy isn't yet set in stone, Glenda Survanca, a spokeswoman at Nine to Five, tells me that support is free for the first 30 days. After that, support will cost you \$60 per hour (six-minute minimum charge).

Now, the good news. To encourage as many people as possible to try the program, Nine to Five Software provides free demo disks. The actual program comes with a six-month money-back guarantee. How many software companies offer the actual program on approval?

AppleWorks

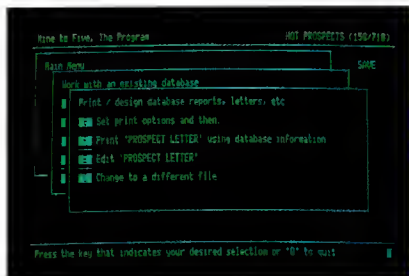
Nine to Five's primary competitor in the marketplace is Apple's highly successful integrated program, AppleWorks, which includes a data-base program, a word processor, and a spreadsheet generator—all on one program disk.

While AppleWorks' data base isn't nearly as capable as Nine to Five in filing, searching, sorting, and reporting, AppleWorks enjoys the edge because it's easier to learn and requires less hardware—a 64K Apple IIe with just one floppy drive, for instance. (That configuration is slow and limited, but it runs.)

Some people prefer the convenience of having one program that "does it all" in terms of preparing documents, keeping data bases, and creating spreadsheets.

A number of publishers market useful enhancements for AppleWorks. Megahaus' ReportWorks adds advanced reporting capabilities to the AppleWorks data base (see our review, September 1986, p. 32). In fact, ReportWorks turns AppleWorks into the only quasirelational Apple data-base program available at this writing (although the new Foundation package claims to be—see our review in an upcoming issue). ReportWorks can extract information from a number of AppleWorks files—not just merge the information, but manipulate it with built-in mathematical functions or user-created formulas. ReportWorks doesn't coexist with AppleWorks and therefore can't automatically update all pertinent files as a true relational data base can. For advanced reporting features using AppleWorks data-base files, though, ReportWorks has no peer.

To ReportWorks, add AutoWorks (see our review in this issue, p. 40) or MacroWorks (see Editors' Choice, August 1986, p. 112), and AppleWorks is even more powerful. These programs let you create shortcut commands called *macros*, which speed you through the sometimes tedious key-pressing process. AutoWorks also lets you use a mouse



*Nine to Five:
Filer, report
generator, and
word processor
all in one.*

for cursor control within menus and records in AppleWorks. And don't forget Pinpoint with its desktop accessories—including the Spelling Checker (see "Desktop Power," March 1986, p. 34, and Reviews, October 1986, p. 27).

For casual small-business use—tasks such as maintaining a mailing list or keeping employee records—AppleWorks probably suffices. If you want a data base to keep track of receivables and inventory (and automatically generate invoices, statements, or purchase orders), AppleWorks by itself is inadequate.

PFS:File and PFS:Report

Originally packaged separately and priced at \$125 each, PFS:File and Report are now bundled together for \$125, or with PFS:Write (a word-processing program with spelling checker) and PFS:Plan (a spreadsheet program) for \$250.

Many veteran Apple II owners cut their teeth on PFS:File when it was known simply as PFS (Personal Filing System). In those days, this very basic filer was considered pretty spiffy. How things change!

Today, we want programs that can search, sort, and report in more sophisticated fashion. We also want to be able to modify our record format. All these features are standard in the "new" PFS:File.

The menu setup used throughout the PFS series is consistent and easy to understand. Like the other programs reviewed here, PFS:File and PFS:Report help you customize your reports in both content and format. These programs can also perform calculations on selected data.

One of PFS:File's strengths is its ability to integrate with other PFS programs. You can import budget data from Plan into File, where you can rearrange and reformat them, then add them to a Write document.

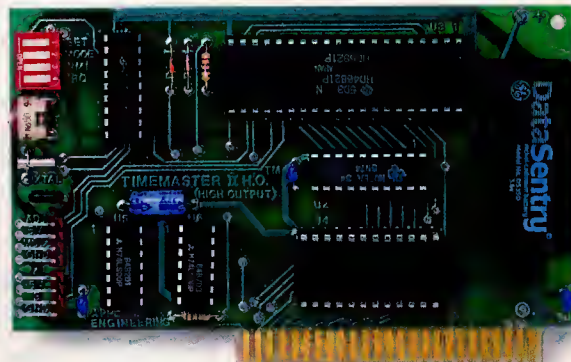
The ProDOS-based PFS programs require 128K of RAM and one floppy drive, though two are recommended for easier sorting by PFS:Report. The PFS series also supports the UniDisk 3.5.

ProFiler

Another file-and-report program in the \$100-and-up category is ProFiler, from PM Software. The noncopy-protected floppy disk contains an experimental version of ProDOS for quicker record retrieval. I found program loading slow, however.

ProFiler requires at least 64K and one floppy drive. The program is compatible with the UniDisk 3.5 and the Sider and ProFile hard-disk drives. As a rule of thumb, ProFiler—like other Apple DBMS's—lets you store more than 1000 records on a floppy disk and tens of thousands of records on a hard-disk drive.

The first clock card to add time and date to AppleWorks™ screens and files.



Timemaster H.O. So many features its become the world's best selling clock card.

It's the smart way to put the time and date on your Apple IIe® or II+®. Because only the Timemaster H.O. packs ALL the important features of all the competition combined, including leap year, year (not just in PRO-DOS), month, date, day of week, hours, minutes, seconds and milliseconds. It's totally PRO-DOS, DOS 3.3, PASCAL and CP/M compatible. And, of course, it works better than any other clock with AppleWorks.

With the Timemaster H.O., you're assured of reliable, trouble-free operation along with simple, one-command time setting, accuracy through leap years, and a firmware maintained interrupt setting.

If you're using or writing software for other clock cards, you're still covered. Because the H.O. will *automatically* emulate them. And only the Timemaster H.O. adds 15 new commands to BASIC. The H.O. even comes complete with two disks full of sample programs, including a computerized appointment book, a DOS dating program, interrupt programs, and over 30 programs that others charge you extra for — or don't even offer. As a low-cost option, you can add true BSR remote control to the H.O., giving you remote control of up to 16 lights and appliances in your home or office.

- Time in hours, minutes, seconds and milliseconds; date with year, month, day of week and leap year • 24-hour military format or 12-hour AM/PM format • Eight software controlled interrupts so you can run two programs at the same time (many examples included) • Can be set to the second • Allows AppleWorks to time and date stamp all data automatically • Displays time and date on AppleWorks screens and files • Five-year warranty

Timemaster H.O. \$129.00
BSR option (may be added later) \$ 39.00

Call to order today, 9 a.m. to 11 p.m. seven days, or send check or money order to Applied Engineering, Master-Card, VISA and C.O.D. welcome. Texas residents add 5½% sales tax. Add \$10.00 outside U.S.A.

AE Applied Engineering
The Apple enhancement experts.

P. O. Box 798, Carrollton, TX 75006 (214) 241-6060

If you own AppleWriter 2.0 (the ProDOS version) you'll appreciate ProFiler's ability to export mailing-list information to an AppleWriter file for mail merging.

ProFiler's appearance is traditional, and its command structure will be most appealing to Apple II Plus owners. Instead of using an apple key, Apple IIe and IIc owners have to use the control key to execute commands. Some programs, like Spinnaker's BetterWorking File & Report, let IIe and IIc users press an apple key, while II Plus owners press the control key.

BetterWorking File & Report

When I first reviewed BetterWorking File & Report (September 1985, p. 75), I criticized its scrambling of the information I had laboriously typed into a file consisting of members of my high school's alumnae association. I'm pleased to report, though, that this major flaw has been eliminated.

BetterWorking File & Report can be integrated with other members of the BetterWorking series: Word Processor (see our review in the May 1986 issue, p. 98) and Spreadsheet (September 1985, p. 75). At \$59.95, File & Report seems to be a bargain. Unfortunately, the program is copy-protected. A backup costs \$12, bringing the price to more than \$70.

File & Report is relatively easy to learn and use. The trickiest part is remembering the somewhat cryptic codes you use to perform searches and to sort and print information in your reports. It's difficult, too, to judge how wide a column you need to accommodate different fields of information. You may forget that Mary's maiden name was Wojciechowski and that she no longer lives at 3221 East Legend Rock Road; when your report is printed, you may wonder who Mary Wojciechow is and where 3221 East Leg is.

With a little advance planning on paper, perhaps you can avoid these hassles, though you may prefer programs like Bank Street Filer or AppleWorks, which tell you the column-width settings you need.

BetterWorking File & Report is the only program reviewed here that runs on that sometimes unappreciated workhorse, the 48K Apple II Plus with one disk drive. Happily, Spinnaker Software hasn't forgotten those who, for one reason or another, didn't need to jump on the hardware-upgrade bandwagon.

Bank Street Filer

If ever there was a supremely easy, reasonably flexible, surprisingly capable DBMS, Bank Street Filer is it. Both 64K and 128K versions are available. The program loads fully



*Filer's Choice:
New kid on the
personal-data-
base block.*

at startup, and you can keep your data disk in drive 1. A second drive isn't required and is probably not even useful.

You'd think that a low-priced (\$69.95) program would be bereft of features. Not so. Bank Street Filer has a large number of built-in capabilities, cleverly disguised and simplified by a natural-language interface. In short, Bank Street Filer speaks English—unlike any other DBMS reviewed in this article.

You won't have to learn any commands (there are a few mnemonic apple-key commands if you want to bother with them); you don't even have to know what to do next—the program prompts you when you make an operational mistake.

Unlike Spinnaker's BetterWorking File & Report, Broderbund's program lets you change the record layout without losing data you've already entered.

Searching is a breeze. The program prompts you by displaying pop-up windows containing words like *is*, *is not*, *starts with*, *ends with*, *contains*, and so forth. The "selection sentence" you create can include more than one sort criterion. For example, you could search for all Apple user-group members living in Flushing, New York, who are plumbers.

So why is Richard Ethier, adjutant for the Rhode Island Disabled Veterans of America, switching from Bank Street Filer to AppleWorks? Now that its membership records are fairly complete, the group is ready to send out notices. While it can create all sorts of columnar reports, Bank Street Filer can't print mailing labels.

To do that, Richard would have to purchase Broderbund's mailing-list management program, Bank Street Mailer. It's of the same high quality as Bank Street Filer and Writer, but it costs an additional \$69.95.

There's another consideration: Richard already owns AppleWorks. And, quite frankly, now that he has a year's computing experience under his belt, he's tired of respond-

Product	Ratings				
	Ease of learning	Ease of use	Support	Documentation	Overall
AppleWorks	■ ■ ■	■ ■ ■	■ ■ ■	■ ■ ■ ■	■ ■ ■
Bank Street Filer	■ ■ ■ ■	■ ■ ■	■ ■	■ ■ ■	■ ■ ■
BetterWorking File & Report	■ ■	■ ■	■	■ ■	■ ■
Filer's Choice	■ ■	■ ■	■ ■	■ ■	■ ■
Nine to Five	■ ■	■ ■ ■	■ ■ ■	■ ■	■ ■ ■
PFS:File and Report	■ ■ ■	■ ■	■	■ ■ ■	■ ■
ProFiler	■ ■	■ ■	■ ■ ■	■ ■	■ ■

ing to the many prompts Bank Street Filer presents. Even if you accept all the defaults (usually Y for yes), you have to respond to about ten questions before you can print a simple report.

Filer's Choice

The new kid on the block among DBMS's is Filer's Choice, a \$49.95 program you can purchase as part of Activision's Personal Choice Collection (see "Your Choice" in this month's New Products section, p. 152). At \$119.95, this software library contains, in addition to Filer's Choice, a word processor (Writer's Choice) and a spreadsheet program (Planner's Choice).

Like Bank Street Filer and BetterWorking File & Report, Filer's Choice is appropriate for casual personal use. The program requires only 64K and one floppy drive. Like Bank Street Filer and BetterWorking File & Report, Filer's Choice offers either a 40-column or 80-column display.

The program is menu-driven, and creating reports is somewhat easier than it is with Spinnaker's program. For instance, if you don't want to guess the number of spaces a

column needs to display complete data, the program has a default setting that calculates the longest piece of information and adds one space.

Unlike Bank Street Filer, Filer's Choice requires you to memorize commands. To make matters worse, they're largely non-mnemonic. This program offers less flexibility than some others do; for instance, you can add new fields, but you can't delete old ones.

Like BetterWorking File & Report, Filer's Choice is copy-protected, and a backup costs you extra—in this case, \$15. When you add it all up, these two programs, which at first appear to be less costly than Bank Street Filer, are actually just as expensive.

Activision should be complimented, though, on other aspects of its support policy. Consulting is free, and the company's toll-free telephone number is clearly displayed in the manual.

Getting Started

Only you can determine the level of sophistication you need in a data-base management system; you'll have to consider each package in terms of price, hardware requirements, report- and letter-generation capabilities, and ease of use. And with the wide variety of Apple data-base programs from which to choose, you may need a DBMS just to help you decide! ■

Product Information

AppleWorks 1.3

Apple Computer
20525 Mariani Avenue
Cupertino, CA 95014
(408) 996-1010
\$250

Reader Service Number 303

Bank Street Filer Bank Street Mailer

Broderbund Software
17 Paul Drive
San Rafael, CA 94903-2101
(415) 479-1170
\$69.95 each

Reader Service Number 304

BetterWorking File & Report 1.1, 1.2

Spinnaker Software
One Kendall Square
Cambridge, MA 02139
(617) 494-1200
\$59.95

Reader Service Number 305

Filer's Choice 1.0, \$49.95 Personal Choice Collection, \$119.95

Activision
2350 Bayshore Frontage
Road
Mountain View, CA 94043
(415) 960-0410

Reader Service Number 306

Nine to Five, the Program

Nine to Five Software
P.O. Box 915
231 East Main Street
Greenwood, IN 46142
(317) 887-2154
\$99.95

Reader Service Number 307

PFS:File and PFS:Report, \$125

PFS:Workmates, \$250
Software Publishing Corp.
1901 Landings Drive
P.O. Box 7210
Mountain View, CA
94039-7210
(415) 962-8910

Reader Service Number 308

ProFiler 2.1.4

PM Software
P.O. Box 1788
Huntington Beach, CA
92647
(714) 963-2221
\$99.95

Reader Service Number 309

Write to Cynthia Field at 10 Border Avenue, Wakefield, RI 02879.

Introducing . . .

CLIPCATURE™

THE
to **NEWSROOM™** and **Print Shop™** owners!

CLIPCATURE provides TOTAL integration between Newsroom clip art, Print Shop graphics, and your own artwork.

NEWSROOM ARTISTS! — Finally, create your own clip art disks using CLIPCATURE and The Newsroom. Start with Newsroom clip art, remodel the pieces as you like, then put THEM on a CLIPCATURE disk. CLIPCATURE disks are functionally IDENTICAL to Newsroom clip art disks!

UNLIMITED CLIP ART! — Use other hi-res graphics programs and CLIPCATURE to create ornate clip art. Or, take any of the thousands of Print Shop compatible graphics, and turn THEM into clip art.

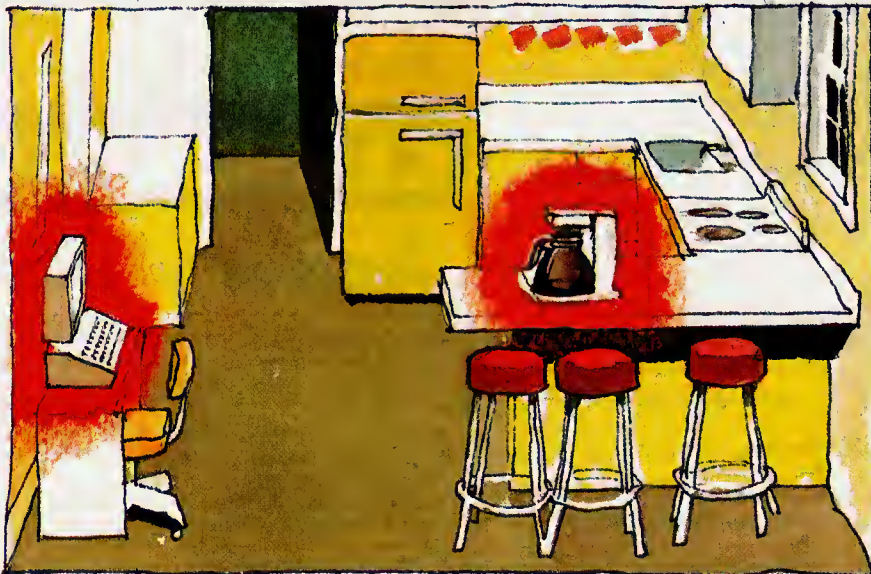
LIMITLESS GRAPHICS! — Convert clip art, or part of any hi-res picture, into a Print Shop graphic. Use any of the hundreds of clip art pieces now available in your banners, signs, or greeting cards!

CLIPCATURE works with any Apple II series computer (+, e, c) and is available ONLY by direct order. Send \$24.95 (U.S.) + \$2 S/H (WI add 5%) to:
CLIPCATURE
477 Windridge Drive
Racine, WI 53402
For faster service, charge to MC/VISA at 1-800-628-2828 ext. 863 (orders only).

*The Newsroom, and The Print Shop, are trademarks of Springboard Software, Inc., and Broderbund Software, Inc., respectively.
Clipcapture is a trademark of W.A. Miller.*

Circle 168 on Reader Service Card.

Home Control



LET APPLE TAKE CONTROL

Turn your Apple II into a home controller: inCider looks at seven systems that offer you convenience, security, and energy savings.

by Tan A. Summers

If you've always thought your computer could do more than process words and calculate numbers, you're right. Your Apple II can keep you safe and warm and save you money on your heating bill in the process. Whether your goal is to detect burglars or just to turn on your coffee maker 15 minutes before you get up in the morning, a home-control system adds a new dimension to your computer.

Why Home Control?

There are as many reasons to automate a home as there are computer buffs to do it. Security is one. Changing levels of light and sound make a house seem lived in while you're away, and motion sensors and magnetic switches on doors and windows can detect intruders. Smoke alarms and humidity detectors warn of fire and flood; an alarm or telephone dialer can then alert your neighbors or an answering service.

Home control saves energy dollars, too. In summer the computer can close drapes and regulate air conditioning. In winter it can set the thermostat back, start your electric blanket, and operate a sophisticated solar-heating arrangement. Close attention to heat and humidity coupled with direct control of fans and heating, ventilation, and air conditioning (HVAC) equipment keeps you more comfortable while reducing energy costs. Also, the computer will remember to turn off those lights your children continually forget.

Of course, you could perform all those tasks yourself. But wouldn't you rather have the computer turn up the heat half an hour before you get up? Convenience is one popular reason for automating a home. A sensor keyed to the garage door can turn on a welcoming light whenever the door opens after dark, or turn lights on as you enter a room and switch them off after you leave. And you can

save steps by using a handheld transmitter that controls lights and appliances at the touch of a button.

How Does It Work?

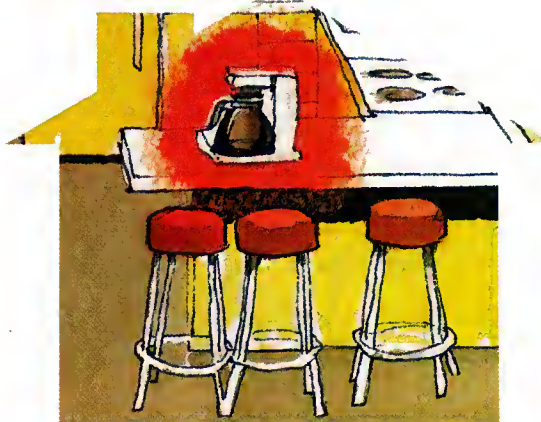
An environmental controller connected to your Apple works by sending signals along existing electrical wiring to receiver units throughout your house. The accompanying software is often easier to use than the average game program, so system setup is a snap. Once you've programmed the controller, your computer is free for other tasks.

Most receivers need only be plugged into wall sockets, with lamps or appliances plugged into the receivers in turn. If you want to control lights that are operated by wall switches, you can replace standard switches and receptacles with receiver-equipped models. Receiver units and simple transmitters can be purchased from many sources, including Sears, Heath, and Radio Shack, as well as directly from the manufacturer, X-10 (USA). (See the accompanying Product Information sidebar for a list of sources of computer-programmable controllers and corresponding software.) All require that your computer be equipped with a serial port—usually the Apple Super Serial card in the case of the //e.

Controllers differ in the level of automation they can effect. Noncomputerized transmitters send signals only once or twice a day to 16 or fewer sets of lights or appliances. Computer-programmed controllers can usually operate as many as 256 sets of devices and can send multiple signals.

More significant is the ability of some computerized controllers to respond to their environment. For instance, heat, light, humidity, and motion sensors inside and outside your house let the controller turn your lights on only if the room is dark, and your sprinkler system only if the ground is

“Controllers differ in the level of automation they can effect; some can respond to their environment.”



dry. Sensors can do double duty: The same motion detector that turns on the bathroom light when your four-year-old gets up during the night can trigger an intruder alarm while you're away on vacation.

Choosing a System

A computerized controller that simply sends signals is inexpensive and simple to install, since you can easily unplug and move receivers. Arrangements that include sensors require more planning and cost more, especially if the sensors contain radio transmitters. Depending on how much control you want, installation may be more complex, too. Standard sensors need to be hard-wired—connected directly to the controller using lengths of electrical wire.

Let's take a look at seven home-control systems, each representing a different price category and level of automation. The X-10 Powerhouse and Bi-Comm's PC-1 and Autocrat LCS provide the most basic type of home control: remote control of lights and appliances without input from external sensors. In the next category, systems that provide some response to sensors but are fairly simple to install, is the CyberLynx SmartHome. CompuHome's TomorrowHouse II, Remote Measurement's ADC-1, and Hypertek's Home Brain are more powerful yet, capable of monitoring a number of remote sensors in a highly personalized control system.

Six controllers (not the ADC-1) come with built-in clock and battery backup. All allow multiple schedules for different circumstances, and most include software in the package. Note that most systems require that you purchase sensors and receiver modules separately.

Simple Systems

The X-10 Powerhouse comes in modules—the controller in one package, software and cables for both the //e and //c in another. To use Powerhouse with the //e, you'll also need expanded memory and an 80-column card.

Powerhouse can regulate up to 256 devices and gives you push-button control over eight lights. It's handicapped by a lack of sensor input, but it's an excellent choice for the homeowner on a budget. Powerhouse provides convenience rather than energy saving or security.

The software is easy to use and surprisingly powerful. With your joystick, you select the room you want to program first, then "install" lights and appropriate appliances in each. Next you can describe the way you want each device to behave. You can set control sequences to operate just once or on a regular basis, and you can easily monitor or change them. An optional security mode lets you indicate the lights you want the controller to turn on or off—at approximate rather than exact times, to make the house look lived in while you're away.

The X-10 software is a bit arbitrary in deciding the number of rooms you can control and the types of devices you can put into them. Rooms are predesignated as

kitchen, bedroom, and so on, with lights and appliance choices appropriate for each. If you have more than four bedrooms or have unusual lighting needs, you'll have to customize the software yourself (a BASIC programming utility is included).

Two other products that fall into the basic-control category are Bi-Comm Systems' PC-1 and Autocrat LCS controllers. The PC-1 is a plug-in expansion card that works with Apple //e-type computers only, while the Autocrat connects to an RS-232 port on either the //e or //c. The PC-1 requires constant use of the computer, but you can disconnect the Autocrat once you've used your computer to program it. The PC-1 comes with comprehensive software you can modify using BASIC. You must purchase software for the Autocrat separately.

SmartHome: Intermediate Complexity

Convenience is the hallmark of the CyberLynx SmartHome system. You can use the controller, which comes with a handheld transmitter, as is the minute you take it out of the box. And, if you prefer, you can add an alarm center, transmitter-equipped smoke alarms, emergency auto-dialer, and personal-emergency signal devices.

The SmartHome system can control only 16 sets of devices; most simple transmitters perform as well. This limitation is balanced, however, by SmartHome's easily installed sensor system. Since smoke alarms, door and window sensors, and motion detectors all use radio signals to communicate with the controller, no wiring is necessary. The motion detector, which you can use either for security or lighting control, also includes a light-sensing diode that prevents lamps from being turned on unnecessarily.

The software is easy to use, but won't let you program multiple signals. Scheduling is rigid, although monitoring or altering it is easy. SmartHome provides no real control over HVAC equipment, but a standard X-10 device that "tricks" the thermometer can simulate it.

SmartHome's best asset is ease of installation. Since the sensors don't require wiring, they're a good choice for rented homes and apartments and for individuals with little technical know-how. SmartHome's emphasis on security also makes it appropriate for people who are most interested in that aspect of home control.

Advanced Control

TomorrowHouse II controls up to 256 devices, can send a practically unlimited number of signals, and can receive input from up to 22 digital switches and 29 sensors. Specially designed with HVAC control in mind, it uses relays to manage up to eight zones of equipment—or you can use some of these 64 relays instead to connect security systems and other electrical devices. The software lets you specify temperature and lighting for every area of your house and lets you link day-to-day and weekly schedules in any combination. Good documentation makes all of this

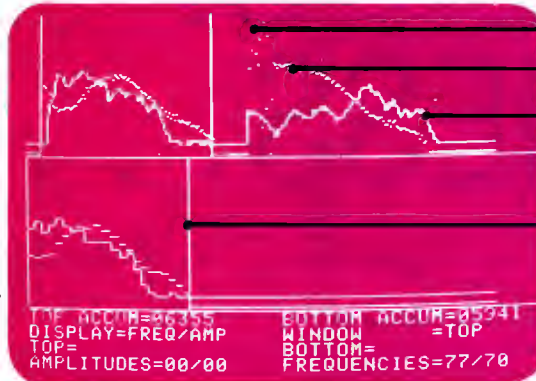
SPEECH CONSTRUCTION SET™

(actual screen photo)

Input Buffer
(Where you record
your voice)

Work Space
(Where you construct
and edit your voice)

**Status and Pitch
windows**
(status shown)



Un-Voiced sound

Voice Pitch

Amplitude

Edit Cursors
(Four total, each
controlled separately)

Top Trace: Recording of "one . . . two"

Bottom Trace: Pasted approximation of "one"

The Most Advanced Graphics-Based Speech Workstation Ever Developed For Your Apple II

A Real Technological Breakthrough

- **Cut and Paste your own voice patterns** to create high quality, natural sounding speech for use in your programs—even with a IIc! No extra hardware is required for playback. Unlock the hidden potential of Apple's sound system. (An optional speech and music card is available but not necessary.)
- **Advanced editing commands** allow you to paste parts of speech from the input buffer to your workspace in any number or order. Insert or delete bits of speech. Raise and lower pitch or amplitude. Remove or add distortion and noise. Expand or compress time. View and edit the format frequencies within each pitch period. Play back any portion of speech including individual pitch periods.
- **Written in machine language** for fast, interactive operation.
- **Hours of fun.** Better than those other graphics-based "construction sets." And unlike a game, it doesn't end. There is always a new sound, technique, or application that you can discover, master, and profit from.
- **Highly educational.** Learn about speech patterns and waveforms. Originally developed as a research and learning tool. Advances knowledge of the speech sciences with new and original theories and concepts.
- **A comprehensive manual** full of examples gets you up-and-running quickly. Multiple help screens, file utilities, and everything else make the **Speech Construction Set** one of the most fascinating programs you will ever own!

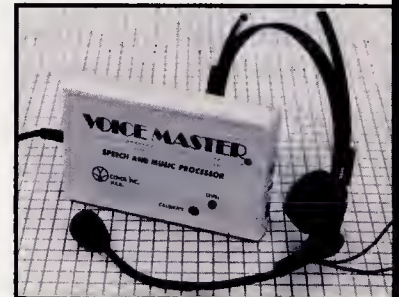
ONLY \$49.95 — Requires the **Voice Master** for operation. (Note: may not function with early model Voice Masters. Call regarding upgrade policy.)

Apple II is a registered trademark of Apple Computer, Inc.

THE AMAZING VOICE MASTER®

SPEECH OUTPUT, VOICE RECOGNITION,

plus a whole lot more
for only **\$89.95!**



- **Let your Apple II talk to you in your own voice.** Not a synthesizer, but a true digitizer that records your natural voice quality—in any accent or language. Save and load speech to disk for an unlimited vocabulary.
- **And let your Apple II understand what you say.** A real word recognizer for groups of 32 words or phrases with unlimited expansion from disk memory. Speech playback and word recognition can work together. Have a two way conversation with your Apple II!
- **Easy for the beginning programmer.** Over 15 new commands are added to Applesoft BASIC to make programming simple and easy. Machine language modules and memory locations available for the more experienced software author.
- **Exciting Music Bonus** lets you hum or whistle to compose music. With the **Voice Harp** program (included), musical notes literally scroll by as you hum! Your composition can be edited, saved and even printed out. High resolution graphics and advanced sound make this one of the best music programs around.

Apple II+ owners require 64K ram and joystick adapter. Adapter available from Covox for only \$9.95.

Apple IIe and II+ owners: Enhance speech quality and music capabilities with the optional Sound Master card. (Installs in any available slot. Uses internal speaker or headphone. Provides independent tone and noise channels and programmable envelope shape. Includes software that adds new BASIC commands such as &SOUND, &ENVELOPE, and &PLAY. Fully supported by Voice Master.) Only **\$39.95**

SPECIAL COMBINATION OFFERS (for a limited time only):

- 1) Voice Master and Sound Master — **\$119.90 (Save \$10!)**
- 2) Voice Master and Speech Construction Set — **\$119.90 (Save \$20!)**
- 3) Voice Master, Sound Master, and Speech Construction Set — **\$149.85 (Save \$30!)**

Please include \$4.00 on all orders for shipping and handling.

All orders shipped UPS. Visa and MasterCard accepted. Allow three weeks for personal checks to clear.

DEMO SPEECH DISK AVAILABLE New! An introduction to Covox speech. The \$5 disk gives several general vocabularies that you can use in any of your own programs. Price is \$5 including postage (\$7 outside North America). Check, money order, or cash only.



COVOX INC.

675-D Conger Street, Eugene, OR 97402
Telex 706017 (AV ALARM UD)



CALL (503) 342-1271



For telephone demo, additional information, or prompt service for credit card orders (except \$5 talking disk),

POWER UP YOUR BUSINESS... **SUCCESS WITH APPLEWORKS!**

**An exclusive collection
of 10 easy-to-use
templates on a disk
that will get the power of
AppleWorks working for you!**

Here's the kind of "computer-ease"
that goes right to your bottom line!
Ten time-saving, work-saving templates
that make AppleWorks a full time partner
in your business. Instant know-how
you can apply immediately to a wide range
of valuable business needs, including:

- ☐ Prepare a Price Quote
- ☐ Personalized Form Letter
- ☐ Build a Mailing List
- ☐ Create a Customer Database
- ☐ Figure a Loan Amortization
- ☐ Publish a Company Newsletter
- ☐ Analyze your Personal or Business Balance Sheet
- ☐ Plan a Home or Business Budget
- ☐ Prepare an Annual Expense Summary

Imagine! Any one of the applications included would be worth the low cost of this unique disk all by itself. But you get all ten, ready-to-run templates for just \$29.97. Less than \$3.00 each, PLUS a detailed documentation booklet that guides you quickly and easily into each application.

Start Boosting Your Personal Productivity Now!

Complete the coupon or attached Order Card and mail with payment or CALL TOLL FREE and charge it to your credit card for quickest service and the surest way to boost your productivity... turn your Apple II into a profit center for your business!

CALL TOLL FREE 1-800-258-5473 (In NH, dial 1-924-9471)

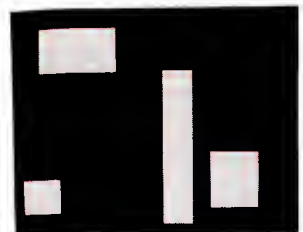


Photo 2. Example using the FILL routine.

BSAVE it with different parameters. FILL should be saved so that it doesn't cross a page boundary. Once you relocate FILL, be sure to change the CALL statement to reflect its new location. You will also have to relocate HIMEM to protect the routine in its new location.
When using FILL, be certain that the point you HPL0T before calling the routine is inside the object you want to fill. If the point lies on the border or outside of an object, you'll get some strange results.

YES,

send me the added power of hotCider's
SUCCESS WITH APPLEWORKS. I get 10 ready-to-run
Templates on a disk, plus complete documentation
booklet for just \$29.97

Foreign Airmail, add US \$1.50 per item.

() Payment enclosed () Visa () Amex () MC

Card # Exp. Date

Signature

(print) Name

Address

City State Zip

Mail to: **hotCider**
80 Pine St.
Peterborough NH 03458

11-86

*AppleWorks and Apple are registered trademarks of Apple Computer, Inc.

"If you know how to work safely with electricity, you can probably set up even the most complex home-control system yourself."



less intimidating than it may sound.

The TomorrowHouse II package includes eight relays, four thermistors (heat sensors), and five receiver modules. You can obtain cables from your local electronics dealer.

This system is one of the best on the market. Its emphasis on HVAC control makes it a good choice for the person interested in saving energy dollars, but it handles security and convenience equally well. Its only drawbacks are a higher price and more demanding installation requirements. Since all sensors must be hard-wired to the controller, this system seems most appropriate for houses still under construction—or for the dedicated do-it-yourselfer.

TomorrowHouse gets some competition from at least two other products that use sensor input extensively. One is the Hypertek Home Brain, capable of receiving input from up to 16 sensors and as many as 64 digital switches. It can control eight relay outputs and 256 X-10-type receivers. Home Brain comes ready to use and doesn't even require a computer. Complete software, however, lets you use your Apple IIe or IIc to personalize your automation program.

Remote Measurement Systems provides a do-it-yourselfer's version of a complete control system—the ADC-1. Its software consists simply of a disk of subroutines you can include in your own BASIC control program, plus printed suggestions for using them. Less powerful than either the Home Brain or TomorrowHouse II systems, ADC-1 can receive input from only four digital switches and 16 sensors; it controls up to six relays. It costs only one-fourth as much as either the Home Brain or TomorrowHouse II, though.

All three of these systems can use input from almost any type of sensor and include provisions in their software for adding new ones when they're invented.

The Bottom Line

Before you buy, take time to find out exactly what the system you're considering can do—the number of devices it can control, the sensors it can use. Software is important, too. Unless you're a programmer, you'll be able to use only the sensors your software allows. Find out what's included with the system. You'll need a number of receiver modules and sensors to set up a complex arrangement, and you can often purchase them at a lower cost from a consumer-electronics store than from the controller's manufacturer.

Although your main consideration in choosing a system should be the ultimate level of control and flexibility you need, cost and ease of installation are important, too. The computerized controller that just sends signals costs little more than a push-button transmitter—it's a terrific bargain for someone who wants to test the water before plunging in. This is especially true because even the most powerful controller uses identical receiver units as the core of its system.

More automation generally means more equipment to install. If you know how to work safely with electricity, you can probably set up even the most complex home-control system yourself. If not, make sure your dealer includes installation costs in the system's purchase price, especially if he has to connect HVAC equipment.

And that's really all there is to it: Plan your system carefully and set it up correctly. Now sit back and relax. After all, that's why you bought it, isn't it? ■

Tan Summers is a freelance journalist specializing in computer-related topics. Contact her at CompuServe address 70177,1202.

Product Information

ADC-1

Remote Measurement Systems
2633 East Lake Avenue
Seattle, WA 98102
(206) 328-2255
\$499 (\$449 standard)

Reader Service Number 324

Autocrat LCS

PC-1
Bi-Comm Systems
1779 Highway 8
Saint Paul, MN 55112
(612) 636-1643
\$1300 (Autocrat LCS)
\$165 (Autocrat software)
\$355 (PC-1)

Reader Service Number 325

Home Brain

Hypertek
P.O. Box 13
Route 22 East
Whitehouse, NJ 08888
(201) 534-9700
\$1850

Reader Service Number 326

Powerhouse

X-10 (USA)
185A Legrande Avenue
Northvale, NJ 07647
(201) 784-9700
\$69.99

Reader Service Number 327

SmartHome I

CyberLynx
4828 Sterling Drive
Boulder, CO 80301
(303) 444-7733
\$720 (computer starter kit)
\$60 (door/window sensor/transmitter)
\$185 (motion detector/transmitter)
\$100 (smoke sensor/transmitter)
\$390 (alarm center)

Reader Service Number 328

TomorrowHouse II

CompuHome Systems
2645 Snyder Court
Walnut Creek, CA 94598
(415) 932-1346
\$1995

Reader Service Number 329

Computers

Central Point Software	
Laser 128K Computer	389.00
<i>The Laser 128 includes an Expansion Slot, RGB Video Output, Parallel Printer Port, and a 10 Kay Numeric Keypad! Most Apple Compatible Computer Available at Any Price!</i>	
Laser 128 2nd Disk Drive	
(5 1/4", 1/2" height)	139.00
Laser 128 800K 3.5" Drive	
w/Controller	279.00
Laser 128 Slot Expansion Box	69.00
Laser 128 Cables	
(Parallel, Serial, or RGB)	24.00

Back-Up Utilities & Boards

Alpha Logic Locksmith 6.0	58.00
Central Point Software	
Copy II Plus Version 6	20.00
Wildcard II	70.00
Computer Applications	
Nibbles Away III/NADOL	29.00
Golden Delicious Software LTD	
CIA Files	29.00
Utilico Software E.D.D. IV	29.00
E.D.D. IV Plus (II, III, I/e w/Disk II)	105.00
E.D.D. IV Plus (I/e w/DuoDisk or UniDisk)	115.00

Entertainment

Access Softwara Beach-Head II	24.00
Accolade Dam Busters or Fight Night	20.00
Double Accolade	36.00
Hard Ball or Laws of the West	20.00
Psi 5 Trading Co. or Ace of Aces	20.00
SunDog V2.0	23.00
Activision	
Alcazar or Master of the Lamps	25.00
After Egg (Male or Female)	32.00
Borrowed Time or Space Shuttle	32.00
Countdown to Shutdown	25.00
Ghost Busters or Pitfall II	25.00
Great American Road Race	25.00
Hacker or Hacker II	25.00
Little Computer People Discovery Kit	25.00
Minshadow or Tracer Sanction	25.00
Murder on The Mississippi or Shanghai	25.00
Star League Baseball	20.00
Avalon Hill Under Fire!	36.00
Avant-Garde Dave Winfield's Batter Up	24.00
Joe Theismann's Pro Football	24.00
Bantam Publishing	
Cave of Time or Escape	22.00
I'Damiano the Wizard of Partestrada	25.00
Shlock Holmes "Another Bow"	25.00
Baudville Video Vegas	18.00
Broderbund Breakers	29.00
Captain Goodnight & the Islands of Fear	23.00
Championship Lode Runner or Karateka	23.00
Mask of the Sun	25.00
Date East Karate Champ	24.00
DataSoft Alternate Reality	26.00
Bruce Lee, Conan, or Mr. Do	23.00
Mind Pursuit or Crosscheck	23.00
The Goonies or Zorro	23.00
The Never Ending Story	23.00
Electronic Arts	
Adventure Construction Set	34.00
Amnesia or Robot Rascals	31.00
Age Of Adventure or One-On-One	11.00
Arctic Fox or Ring Out	28.00
Bard's Tale or Reach For The Stars	31.00
Bard's Tale II: The Destiny Knight	34.00
Beethoven or Make Your Own Murder Party	28.00
Carriers At War or Europe Ablaze	34.00
ChessMaster 2000 or Ogre	28.00
Lords of Conquest	28.00
Music or Pinball Construction Set	11.00
7 Cities of Gold or Super Boulder Dash	11.00
SkyFox or Archon II	28.00
Software Golden Oldies or Dark Lord	24.00
Timothy Leary's Mind Mirror	24.00
EPX	
Ballblazer or Rescue on Fractulus	25.00
Championship Wrestling or Destroyer	25.00
G.I. Joe	25.00
Koronis Rift or The Eldolon	25.00
Summer Games II or Winter Games	25.00
Temple of Apshai Trilogy	25.00
World's Greatest Baseball Game	24.00
World's Greatest Football Game	25.00
Firebird Licensees, Inc. Elite	25.00
Colossus Chess IV	25.00
Hayden Software Sargon III	32.00
Infocom A Mind Forever Voyaging	28.00
Cuthroths, Seastaker, or Ballyhoo	25.00
Deadline, or Starcross or SpellBreaker	31.00
Hitchhiker's Guide or Trinity	25.00
Infidel or Sorcerer	30.00
Witness, Planetfall, or Enchanter	25.00
Zork I, Wishbringer, or Foobitzy	25.00
Zork II, Zork III, or Suspect	28.00
Micro League Sports	
Micro League Baseball	25.00
General Manager/Owner	25.00
Microprose	
Crusade in Europe or Conflict in Vietnam	25.00
Decision in The Desert	25.00
F-15 Strike Eagle, Gunship or Acrojet	25.00
Gunship, Silent Service, or Kennedy Approach	22.00
Solo Flight or NATO Commander	22.00
Mindscape Dick Francis' High Stakes	25.00
Forbidden Castle or Voodoo Island	25.00
James Bond: "A View To Kill"	25.00
James Bond: "Goldfinger"	25.00
Racter	29.00

Rambo: "First Blood Part II"	25.00
Stephen King's "The Mist"	25.00
The American Challenge Sailing	25.00
The Halley Project	19.00
Omnitrend Software	
Omnitrend's Universe I	64.00
Omnitrend's Universe II	41.00
One Step Software Golf Best Pinehurst	31.00
Golf's Best St. Andrews	31.00
Origin Systems Moebius	41.00
AutoDuel	34.00
Ultima III: Exodus or Ultima IV	41.00
Polsware	
Expedition Amazon or Oo-Topos	15.00
Coveted Mirror, Kyphus or Transylvania	15.00
Sword of Kadash or Crimson Crown	15.00
Random House Alpine Encounter	24.00
Tournament Bridge	30.00
Sierra On-Line Championship Boxing	22.00
Kings Quest or King's Quest II	32.00
The Black Cauldron	25.00
Simon & Schuster	
Spy Hunter or Tapper	19.00
Star Trek (Kobayashi Alternative)	25.00
Sir-Tach Wizardry	25.00
Knight of Diamonds	22.00
Legacy of Lylgarny	25.00
Rescue Raiders	22.00
Wizprint	16.00
Usurper: The Mines of Oynarr	27.00
Spectrum Holobyte Gato	22.00
Strategic Simulations	
Battalion Commander or Objective Kursk	25.00
Battle For Normandy or Field of Fire	25.00
Battle Group	30.00
Battle of Antientam	30.00
Gemstone Warrior, or Wizard's Crown	24.00
Geopolitique 1990 or Rails West	25.00
Germany 1985 or Carrier Force	38.00
Imperial Galactica or BroadSides	25.00
Kampgruppe or Reforger 88	38.00
NAM or Professional Tour Golf	24.00
North Atlantic '86	38.00
Phantasia II, or Panzer Grenadier	24.00
Ring's of Zilfin, or Colonial Conquest	24.00
U.S.A.F. or Mech Brigade	36.00
War in Russia	49.00
Sublogic Flight Simulator II	35.00
Tellurium Agatha Christie: The Scoop	24.00
Amazon or Dragon World	12.00
Fahrenheit 451 or Shadow Keep	12.00
Nine Princess In Amber	24.00
Perry Mason: Mandarin Murders	24.00
Rendezvous with Rama	12.00
Windham Classics	
Alice in Wonderland	26.00
Below The Root or	
Swiss Family Robinson	26.00
Wizard Of Oz or Treasures Island	26.00

Utility/Language Software

Apple Computer	
Apple II Instant Pascal	115.00
Apple Pascal V1.3	199.00
Beagle Brothers	
MacroWorks or Beagle Basic	19.00
Beagle G.P.L.E.	26.00
Big U, Double Take, or Pro-Byter	18.50
D-Code, Extra K, or Power Print	21.00
DiskQuick or I.O. Silver	16.00
Dos Bos or Silicon Salad	13.00
Fat Cat	18.50
Tip Disk #1	11.00
Pronto Dos or Utility City	15.50
Triple Dump	21.00
Borland Turbo Pascal 3.0	45.00
Turbo Database Tool Box	35.00
Turbo Tutor	22.00
FunK Software	
Sideways ProDOS & Dos 3.3	39.00
Meacomp	
UniDisk (Dos 3.3 for the UniDrive)	28.00
Quality Software Bag of Tricks II	32.00
Beneath Apple Dos or	
Beneath Apple ProDOS	13.00
Roger Wagner Merlin ProDOS	65.00
Merlin Assembler	42.00
Merlin Combo Pack	69.00
Software Masters	
Visible Computer: 6502	36.00
The Byte Works	
ORCA/M Macro Assembler ProDOS	59.00
Vindex AppleWorks Modify Plus 128K	49.00
Vilberg Brothers	
DMP Utilities (ImageWriter or Epson)	35.00
Zedcor ZBASIC	65.00

Graphics Packages

Activision Gary Kitchen's Game Maker	32.00
Designer's Pencil	26.00
Bantam Software	
Walt Disney Card & Party Shop	26.00
Walt Disney Comic Strip Maker	26.00
Baudville Blazing Peddles	29.00
Prince (C.Itoh or Epson)	52.00
Prince (ImageWriter II-No Ribbons)	29.00
Pix-It	29.00
Pix-It Shape Library 1, 2, or 3	12.95
Take 1	34.00
Take 1 Programmer's Toolkit	39.00
Actors & Actions or Heros & Villains	18.00
Beagle Brothers Alpha Plot	21.00
Beagle Graphics	31.00
Flex Text or Frame Up	15.50
Font Mechanic or Minipix Disk #1	15.50
Shape Mechanic	21.00
Broderbund Toy Shop	39.00
Animata	44.00
Dazzle Draw	38.00
Print Shop Enhanced or Fantavision	32.00
Print Shop Companion	25.00
Print Shop Graphics Library I, II, or III	16.00
Print Shop Paper Refill	12.95

Data Transforms Fontrix 1.5	54.00
Font Paks 1-15 ea.	14.00
Electronic Arts Movie Maker	27.00
Penguin Software	
New Complete Graphics System	26.00
The Graphics Magician	26.00
The Graphics Magician Jr.	14.00
Roger Wagner Printographer	26.00
Sensible Software	
The Graphics Department	67.00
Simon & Schuster	
Great INTL Paper Airplane Const. Kit	25.00
Springboard Newsroom	35.00
Certificate Maker	30.00
Newsroom Clip Art Collection Vol. 1	18.00
Newsroom Clip Art Collection Vol. 2	25.00
Graphics Expander Vol. 1	25.00
T & W Systems, Inc.	
AdApple (Entry: Laval Cad)	69.00
Unison World Printmaster	25.00
Art Gallery I	25.00
Art Gallery II or III	19.00
Weekly Reader Stickybear Printer	23.00

Communications

Apple Computer Access II (IIa, IIc only)	62.00
Compuserve Compuserve Starter Kit	27.00
Dow Jones Dow Jones Membership Kit	22.00
Hsyas Smartcom I	72.00
Hayes Terminal Pgm. (Smartmodem)	59.00
PBI Software Commworks (I/e & II/c)	65.00
Quark Terminix IIe	62.00
Softronics Softerm II	125.00
United Software Industries	
ASCII: Express Pro: ProDOS or Dos 3.3	75.00

Business Software

Advanced Logic Systems SpellWorks	31.00
The Handlers (II+, IIa, IIc)	59.00
Apple Apple Works (IIe, IIc)	199.00
Apple Writer II 2.0 ProDOS (IIe, IIc)	119.00
Quickfile (IIa only)	79.00
Batteries Included Paper Clip	38.00
BPI Systems	
BPI General Accounting ProDOS	219.00
BPI AR/AP/PR or Inv. ProDOS (ea.)	219.00
Broderbund	
Bank Street Writer (IIe, IIc) or Speller	44.00
Bank Street Filer (128K) or Mailer	44.00
Dow Jones Software	
Dow Jones Membership Kit	22.00
Good Software Investor III	149.00
Amortizer III	56.00
Haba/Arays Home Accountant	47.00
Home Accountant IIc	45.00
HabaWorks	109.00
AppleWorks Buddies	71.00
HabaCalc 'N' Graph	42.00
Haba Speller or HabaMerge	29.00
HabaFile	42.00
Human Edge Software	
Communications or Management Edge	57.00
Mind Prober	28.00
Mind Over Minors	31.00
Sales or Negotiation Edge	57.00
Intuit Quicken	49.00
Living Videotext	
Think Tank V1.1 (II+ or IIe)	79.00
Manzanita	
BusinessWorks	
System Manager (Required)	65.00
GL/AR/AP/ or Inventory Control	249.00
Payroll Module	279.00
The Business Accountant	
System Manager (Required)	65.00
GL/AR/AP/ or Inventory Control	249.00
Payroll Module	279.00
The Advanced Business Accountant	
System Manager (Required)	65.00
GL/AR/AP/ or Inventory Control	249.00
Payroll Module	279.00
MECA Managing Your Money	119.00
Megaheads MegaWorks	79.00
ReportWorks	79.00
Thinkworks	79.00
Monogram Dollars and Sense	72.00
(II+, IIe or IIc)	72.00
Forecast (64K or 128K)	38.00
Nolo Press Will Writer (Version 2.0)	29.00
PBI Software Graphworks 1.3	45.00
Jeeves	29.00
Peachtree	
Back To Basics Accounting System:	
GL/AR/AP	99.00
Back To Basics GL, AP, AR	52.00
Personal Choice Software	
Filler's Choice	35.00
Personal Choice Collection	75.00
Planner's Choice	35.00
Writer's Choice	35.00
Pinpoint Publishing Pinpoint	49.00
Pinpoint Spelling Checker	39.00
Pinpoint Document Checker	39.00
Pinpoint Toolkit	28.00
Point To Point	75.00
Informerge	52.00
RunRun	28.00
Pinpoint I/e Upgrade Kit	23.00
Pinpoint Ram Enhancement	23.00
Pinpoint Modern Enhancement	23.00
PM Software	
ProFILER 2.1	69.00
Professional Software Fleet System 3	49.00
Integrated Word Processing,	
Spell Checking & Thesaurus	
Quark Catalyst I/e V3.0	59.00
Word Juggler & Lexicheck I/e	59.00
Roger Wagner Publishing	
Mouse Write (ver. 2.6.8)	89.00
The Write Choice	42.00
Sensible Software Bookends-ProDOS	67.00
Sensible Grammar ProDOS	56.00
Sensible Speller-Dos or ProDOS	69.00

Sierra On-Line Smart Money	52.00
Homework Plus (128K) w/Spallar	45.00
Simon & Schuster	
JK Lasser's Income Tax	45.00
Webster's Spelling Checker (ProDOS)	38.00
Software Publishing	
All Programs for I/a with 128K or I/c	
PFS: Workmates	149.00
(File/Raport/Plan/Writa)	76.00
PFS: Graph	76.00
PFS: File/Report Bundle	76.00
PFS: Write or Plan (I/a, I/c)	76.00
Sorcim/IUS SuperCalc 3a	105.00
Style Wars Multiscribe	46.00
Time Works	
Sylvia Porter's Financial Planner	62.00
VIP Software VIP Professional	145.00
(Lotus 1-2-3 Work-Alike)	
Word Perfect Corporation	
WordPerfect V1.1 (I/e & I/c)	85.00

Educational Software

Addison Wesley Smart Eyes	38.00
Apple Apple Logo I/ 128K (I/a, I/c only)	85.00
Bantam Software	
Fantastic Animals or Road Rally USA	25.00
Creative Contraptions	25.00
Barron's Computer SAT Revised Version	32.00
Baudville Guitar Wizard	18.00
Ted Bear Discovers...Rainy Day Games	18.00
Better Working	
File & Report or Spreadsheet	38.00
Homework Helpers: Math Word Problems	32.00
Homework Helpers: Writing	32.00
Typing Made Easy	32.00
Word Processor	38.00
Broderbund	
Science Tool Kit Master Modula	45.00
Type!	29.00
Welcome Aboard Muppets!	25.00
Where in the World is Carmen, San Diego?	26.00
Where in the USA is Carmen, San Diego?	29.00
CS Software Adventure Master	14.00
America Coast to Coast	23.00
Body in Focus or Dinosaur Dig	23.00
Forecast! or T-Rex	28.00
Goren's Bridge	45.00
Mastering The SAT	56.00
Success w/Algebra (ea.)	20.00
Success w/Math (ea.)	14.00
Devision & Associates	
Alge-Blaster, Classmate or Math Blaster	28.00
Grammar Gramlins	50.00
Homeworker	39.00
Speed Reader II	11.95
Speed Reader Data A, B, D, or D	28.00
Spell-It or Word Attack!	28.00
Designware	
European Nations & Locations	29.00
Gremmer Examiner	29.00
Remember	25.00
Spellicopter or Spellinggraph	25.00
States & Traits or Mission Algebra	29.00
The Body Transparent	29.00
Fisher Price Alpha Build or Logic Levels	16.00
First Man on The Moon Math	26.00
Jungle Book Reading	26.00
Peter Rabbit Reading	26.00
Peter & The Wolf Music	26.00
Groler Publishing EduCalc	32.00
Friendly Filer or Easy Graph	26.00
Science Island or Treasure Hunter	26.00
Harcourt, Brace, Jovanovich	
Computer SAT	49.00
Intracorp, Inc.	
Intracourse Analysis Module	36.00
Intracourse Compatibility Module	29.00
Intracourse Analysis & Compatibility Module	59.00
Learning Company	

In Connecticut Call 378-3662 or 378-8293

Simon & Schuster Chem Lab	25.00
Lovely's Preparation for SAT	39.00
Typing Tutor III	32.00
Kermit's Electronic Storybook	22.00
Spinmaker	
Adventure Creator	19.00
Delta Drawing	25.00
Fraction Fever, Story Machine, or Facemaker	17.00
Grandma's House or Rhymes & Riddles	17.00
In Search Of...	21.00
Kidwriter	25.00
Alphabet Zoo, Trains, or Math Busters	19.00
Kindercomp or Kids on Keys	19.00
Megabots	19.00
Snooper Troops Case I or II	21.00
Springboard	
Early Games or Stickers	21.00
Fraction Factory or Make a Match	18.00
Mask Parade or Easy as ABC	24.00
Rainbow Painter or Puzzle Master	21.00
Terrapin Enhanced Terrapin Logo V3.0	64.00
TimeWorks	
Evelyn Wood Dynamic Reader	44.00
Weekly Reader	
Exploring Tables & Graphs 1 or 2	20.00
Pic Builder	23.00
Stickybaa Series: Sticky Bear ABC,	
Car Builder, Basic, Basket Bounce, Bop, Math, Math II, Numbers, Opposites, Reading, Shapes, Spellgrabber, Typing, & Townbuilder (each)	23.00

Modems

Anchor Automation	
Signalman Express 1200	235.00
Signalman Lightning 2400	355.00
Volkmodem 12	179.00
Hayes Hayes Micromodem //e	139.00
Hayes 300 Baud Smartmodem //c	159.00
Hayes 300 Baud Smartmodem	139.00
Hayes 1200 Baud Smartmodem	369.00
Hayes 2400 Baud Smartmodem	579.00
Transet 1000	269.00
Novation Novation Apple Cat II	189.00
Novation 212 Apple Cat II	355.00
Novation 212 Upgrade	219.00
Novation 2400 Baud External	479.00
Prometheu	
Pro Modem 1200 (External)	279.00
ProModem 1200G (Non Expandable)	199.00
Pro Modem 1200A (Internal)	249.00
Pro Modem 300c	89.00
Options Processor or Alphanumeric Display	69.00
U.S. Robotics	
U.S. Robotics Password 1200	199.00
U.S. Robotics Courier 2400	399.00
Zoom Telephonics Zoom/Modem //e	105.00
Zoom/Modem //e Plus	115.00

Accelerators/Ramcards Z-80/80 Col.

Advanced Logic Systems	
Add-Ram 16	65.00
Add-Ram 80/64	52.00
Apple Computer	
Apple II Memory Expansion Card	225.00
Apple //e Extended 80 Col. Card	89.00
Apple //e Enhancement Kit	45.00
Applied Engineering	
RamWorks III (64K to 3 MB)	Call
RamFactor (256K to 1MB)	Call
Phasor (//+ or //e)	215.00
Z-Ram //c (256 or 512K)	Call
Ramworks RGB Option & 16 Bit Option	Call
TransWarp Accelerator	Call
TransWarp 16 Bit Upgrade	Call
ViewMaster 80	109.00
Z-80 Plus	109.00
Apricorn Apricorn 64K Extend-It	75.00
Apricorn 16K Ramcard II+	79.00
AST Research	
MegaRamPlus w/64K	125.00
MegaRamPlus w/256K	179.00
SprintDisk w/256K	189.00
SprintDisk w/512K	269.00
Checkmate Technology	
MultiRam CX (256K)	149.00
MultiRam CX (512K)	189.00
MultiRam CX-Piggyback (000K)	199.00
MultiRam CX-Piggyback (256K)	219.00
MultiRam CX-Piggyback (512K)	229.00
MultiRam //e (128K)	129.00
MultiRam //e RGB (128K)	159.00
MultiRam //e (256K)	149.00
MultiRam //e RGB (256K)	179.00
MultiRam //e (512K)	179.00
MultiRam //e RGB (512K)	225.00
Zee-80A	55.00
Information Appliance SwyftCard	69.00
Micro Sci Micro Sci 80/64e	69.00
MCT MCT Speed Demon	155.00
Titan Industries Saturn 128K Ram	175.00
Accelerator //e	219.00

Multifunction Cards

AST Research	
Multi I/O Clock/Calendar	99.00
Multi I/O Clock/Calendar/2 Ser. Ports	139.00
Prometheu VERSAcad	129.00
Quadram Multicore w/OK	149.00
Multicore w/256K	179.00
Specify Apple or IBM RGB Cable:	
Extended Multifunction Board (64K)	159.00
Extended Multifunction Board w/RGB	189.00
RGB Upgrade (Apple or IBM RGB)	45.00
Street Electronics	
Business Card Parallel	179.00
Business Card Serial	159.00

Printer Interface Cards

Apple Apple Super Serial Card	115.00
Apricorn Apricorn //c	54.00
Super Serial Card	92.00
Orange Micro Serial Grappler Plus	75.00
Grappler+	75.00
Buffered Grappler+	119.00
Grappler //c	79.00
Imagebuffer 64K	
(For Imagewriter II Printer)	69.00
Hot Link	49.00
Quadram	
APIC Parallel Interface with Cable	69.00
APIC C/G Parallel Interface w/Color Gr.	75.00
Serial Interface (AB-400)	71.00
Buffered Serial Interface (64K)	109.00
TextPrint Print-It! (Parallel or Serial)	132.00
Thirdware Choice of Parallel, Serial	
(Imagewriter I), or Serial (Imagewriter II)	
Finger Print Plus II+, //e, //c	89.00

Clock/Calendar Peripherals

Applied Engineering	
TimeMaster H.O.	99.00
BSR Interface	39.00
//c System Clock	65.00
Quadram	
Pro Dos Clock/Calendar Card	62.00
Creative Peripherals	
Seiko Datagraph 2001 w/Time Trax	
(//e or //c)	149.00
//c System Clock	55.00
Street Electronics Livewire	70.00
Thunderware Thunderclock Plus	109.00
X-10 (USA) Inc.	
X-10 Powerhouse Computer Interface	49.00
X-10 Wall Switch Module	18.00
X-10 Lamp Module	15.00
X-10 Appliance Module	15.00

Video Cards

Video 7	
Color Enhancer //e	119.00
Color Enhancer //c	89.00
Screen Enhancer //e	89.00
Screen Enhancer //c	49.00

Accessories

Kensington System Saver	59.00
Cool + Time	69.00
Curtis Diamond	30.00
Curtis Emerald	36.00
Curtis Ruby	54.00
Curtis Sapphire	47.00
Apple Mouse //e	119.00
Apple Mouse //c	89.00
Phasor Universal Joystick II+, //e, //c	25.00
Hayes Mach II Joystick	29.00
Hayes Mach III Joystick	35.00
Kraft Quickstick //c	49.00
Kraft Joystick Universal (II+ //e, //c)	29.00
Koala Pad Plus w/Graphics Exhibitor	79.00
Trackhouse Keypad (//e Standard)	85.00
Trackhouse Keypad	
(//e Programmable)	139.00
Mockingboard A Board	119.00
Mockingboard C Board	99.00
Echo II Plus	82.00
The Cricket //c	12.00
Rainbow Paper Pak (300 Sheets)	12.00
ImageWriter Ribbon-Black	4.50
ImageWriter Ribbon-Color	5.00
ImageWriter II Color Ribbon	6.95
ImageWriter Rainbow Pack (6 Colors)	27.00
Environmental Software: Apple Skins	
Apple //c or //e w/Monitor II Cover	19.00
Apple //c w/Color Monitor Cover	21.00
Apple //e Professional System Cover	23.00
Apple //c, //e, or UniDisk Drive Cover	7.00

Blank Media

5 1/4" Blank Diskettes	
BASF 5.25" SS/DD (box of 10)	10.50
Elephant 5.25" SS/DD (box of 10)	10.50
Verbatim 5.25" SS/DD (box of 10)	10.50
Sony 5.25" SS/DD (box of 10)	10.25
Maxell 5.25" SS/DD (box of 10)	10.25
Nashua 5.25" SS/DD (box of 10)	12.50
Memorex 5.25" SS/DD (box of 10)	13.00
3M 5.25" SS/DD (box of 10)	12.00
Dysan 5.25" SS/DD (box of 10)	15.99
3 1/2" Blank Diskettes	
BASF 3.5" DS/DD (box of 5)	14.00
Bulk (Sony) 3 1/2" DS/DD (box of 10)	24.00
Centech 3 1/2" DS/DD Color Disks	
(box of 10)	24.00
Sony 3.5" DS/DD (box of 10)	27.00
Fuji 3.5" DS/DD (box of 10)	26.00
Verbatim DS/DD (box of 10)	28.00
Maxell 3.5" DS/DD (box of 10)	28.00
3M 3.5" DS/DD (box of 10)	28.00

Printers

Brother	
HR-15XL (20cps) Daisywheel	319.00
HR-25 (23cps) Daisywheel	519.00
HR-35 (35cps) Daisywheel	729.00
TwinWriter 5	839.00
Citizen	
120-D (120cps) W/NLQ 10" Carriage	195.00
MSP-10 (160 cps) 10" Carriage	299.00
MSP-15 (160 cps) 15" Carriage	399.00
MSP-20 (200 cps) 10" Carriage	329.00
MSP-25 (200 cps) 15" Carriage	489.00

Epson	Call
LX-86	For Most
FX-85	Recent
FX-286	Call
EX-800/1000	Call
LO-2500	Call
	Prices
Juki	
6000 (10 cps) Daisywheel/Par.	179.00
6100 (78 cps) Daisywheel/Par.	349.00
6200 (30 cps) Daisywheel/Par.	489.00
6300 (40 cps) Daisywheel/Par.	679.00
Okidata Okimate 20 Color Printer	125.00
Microline 182P (120cps Dot Matrix 10")	229.00
Microline 183P (120cps Dot Matrix 15")	389.00
Microline 192P (120cps Dot Matrix 10")	
(200cps Dot Matrix 10")	359.00
Microline 193PPlus	
(200cps Dot Matrix 15")	529.00
Microline 292P (240cps Dot Matrix 10")	509.00
Microline 293P (240cps Dot Matrix 15")	649.00
Microline 192 Apple	
(160cps Dot Matrix 10")	389.00
Microline 193 Apple	
(160cps Dot Matrix 15")	559.00
Panasonic	
KXP-1080AP (100 cps)	249.00
ImageWriter Compatible	219.00
KXP-1080 (100 cps) NLQ Mode	249.00
KXP-1091 (120 cps) NLQ Mode	249.00
KXP-1092 (180 cps) NLQ Mode	329.00
KXP-1592 (160 cps) NLQ Mode	449.00
KXP-1595 (240 cps) NLQ Mode	599.00
KXP-3131 (16 cps) Daisywheel	269.00
KXP-3151 (23 cps) Daisywheel	409.00
Star Micronics NX-10 (120cps) Parallel	249.00
SG-15 (120cps) Parallel	389.00
SD-10 (160cps) Parallel	339.00
SD-15 (160cps) Parallel	449.00
SR-10 (200cps) Parallel	489.00
SR-15 (200cps) Parallel	589.00
Toshiba	
P-321 24 Pin (216cps) Par./Ser. 10"	499.00
P-341 24 Pin (216cps) Par./Ser. 15"	799.00
P-351 24 Pin (288cps) Par./Ser. 15"	1079.00

Disk Drives/Hard Drives

AST Research	
MicroStor 10MB Tape Backup Only	955.00
MicroStor 10MB Hard Disk Only	955.00
MicroStor 10MB Hard Disk w/10MB Tape Backup	1475.00
Central Point Software	
Mix and Match 5 1/4 & 3 1/2" Drives:	
Universal Disk Controller	119.00
Universal Disk Controller/800KB	
Drive Bundle	279.00
Micro Sci A2 Full Height	149.00
A5 Slimline //e	149.00
A5 Slimline //c	159.00
Micro Sci C2 Controller	55.00
Mitac AD-1 Full Height //e	139.00
AD-3C Slimline //e or //c	129.00
Pico Products	
Apple Half-Height II+, //e, //c	139.00
ProAPP	
ProAPP 20 MB Hard Disk System	Call
(II+, //e, //c)	

Video Technology Computers, Inc.	
Laser FD 100c (Apple //c)	139.00
Laser FD 100c (Apple II Series)	139.00

Monitors

Amdek	
Color Monitor 600 (RGB)	399.00
Color Monitor 722 (RGB)	499.00
Precision International, Inc.	
C-Vue Flat Panel Display (Apple //c)	359.00
Princeton Graphics	
HX-9 9" RGB Color	399.00
HX-12 12" RGB Color	429.00
Sakata SG-1000 Green	115.00
SA-1000 Amber	125.00
SC-100 Composite Color	149.00
SC-200 RGB Color	339.00
SC-300P RGB Color	589.00
Taxan 115 12" Hi-Res Green	129.00
116 12" Hi-Res Amber	129.00
620 12" Hi-Res RGB Color (640x200)	389.00
410-80/64 RGB-II Interface	179.00
Teknika MJ-22 RGB Color Monitor	259.00

Ordering Instructions


VISA AND MASTERCARD ACCEPTED
To order, call us anytime Monday thru Friday 9:00 to 9:00, Saturday 10:00 to 6:00. For fast delivery it ordering by mail, send cashier's check, certified check or money order. Fortune 1000 & Government checks honored immediately. Personal and other company checks allow 2-3 weeks to clear. Mastercard & Visa, include card # & expiration date. Connecticut residents add 7.5% sales tax.
Shipping Charges — Software Only — \$3.00
Minimum charge U.S. Mainland. With C.O.D. shipments add an additional \$2.00. U.S. Postal, APO, and FPO add 3% (\$5.00 Min.). Alaska or Hawaii add 6% (\$10.00 Min.). Canadian orders add 10% (\$15.00 Min.). Foreign Orders except Canada—Add 18% (\$25.00 Min.).
Hardware — Please call for shipping charges.
Our Policy — We do not guarantee machine compatibility. All products are new and include factory warranty, therefore All sales are final. Defective software will be replaced by the same item only. Defective hardware will be replaced or repaired at our discretion. Prices & availability subject to change without notice. Products purchased in error, subject to 20% restocking fee. All returns must have an authorization number or they will not be accepted. Call (203) 378-3662 to obtain one before returning defective products for replacement.
Visit Our New Showroom:
Exit 32 off I-95
CODE - ID1101

PROGRAMS



Visit Our New Showroom: Exit 32 Off I-95
Station House Square
2505 Main Street
Stratford, Conn. 06497
Telephone Hours: Monday-Friday 9-9;
Saturday 10-6
Showroom Hours: Monday-Friday 9-6;
Saturday 10-6
Orders Only TOLL-FREE **1-800-832-3201**

WHAT IS YOUR LOWEST PRICED IIc PRINTER OPTION?

	Epson LX80	\$329		Apple ImageWriter® II	\$599
	Hotlink [®]	69		Apple Cable	29
	<hr/>			<hr/>	
	\$398			\$628	
	Suggested Retail Price			Suggested Retail Price	

Save \$230 with **HotLink[™]**
IIc Printer Interface

HotLink, the economical and effective link for your Apple IIc and parallel printer

- Interface the parallel printer of your choice: Okidata 182 & 192; Star Micronics SG-10; Panasonic 1090; Citizen MSP-10; and all other standard parallel printers.
- Full text and graphics compatibility with your most popular software packages
- Easy to use and install
- Text/graphics switch for maximum flexibility
- Low power CMOS technology – no external power required
- Orange Micro's "Seldom Used" one-year warranty



For a full graphics interface with support for Mousepaint[®], we recommend the Grappler[®] C

HotLink, from Orange Micro, Inc. – your lowest priced solution. Contact your local Apple dealer for details.

Circle 122 on Reader Service Card.

Orange Micro[®]
inc.

1400 N. Lakeview Ave., Anaheim, CA 92807
(714) 779-2772 Telex: 5101001014 ORANGE MICRO

© Orange Micro, Inc., 1986

LEARNING LANGUAGES WITH LOGO

*Create a Logo lexicon with TransAid,
a foreign-language translation program
you can tailor to your needs.*

by Glenn Thomas

If you've just started learning a foreign language, it probably seems to have no clear structure—and what about all those confusing cases and tenses?

TransAid, an Apple Logo II program, can help you translate text. Creating your own dictionary provides painless vocabulary drill, and when you've accumulated a number of terms, you'll have an electronic tool for deciphering the mystery of a foreign language.

Setting Up the TransAid Dictionary

Using your Apple Logo II program, format a disk and give it volume name LOGO to ensure compatibility with the start-up file you'll create. Then type in **Listings 1** through **5** and save them with the following names: STARTUP (automatically loaded start-up program); TRANS-AID.LOG (initialization, termination, and main menu); TRANST.LOG (translation procedures); TRANSD.LOG (dictionary utilities); and TRANSP.LOG (text-printing procedure). **Figure 1** shows TransAid's program flow.

Embedded LOAD commands link the last four files and let you switch from one to another. Segmenting is a programming trade-off—speed versus room. Consolidating the files would eliminate the delay during file loading, but the reduced amount of RAM available would mean a smaller dictionary during translation.

TransAid maintains your dictionary as variable VOCAB in file VOCAB.LOG. The program's target language as presented in **Listing 2** is Dutch; to start a dictionary for a different language, erase or rename the VOCAB.LOG file, and replace the word HET in line 3 of procedure TRANS.AID in the TRANSAID.LOG file (**Listing 2**) with the word for "the" in the new language (be sure to use uppercase). Then boot the Apple Logo II program disk, insert your TransAid disk, and press the return key to boot the program; it automatically loads and initializes, then creates a new one-word dictionary. Once you've started a dictionary (the VOCAB.LOG file), TransAid carries it over from session to session.

rendidas

par



nach

TUTTI

übernimmt

nicht

MOI

DROIT

scritto

möglich



TransAid's dictionary illustrates a particularly flexible data structure: an arbitrary number of alternate entry words (synonyms or verb forms, for instance) linked to any number of single- or multiple-word associations (such as definitions). Using the dictionary utilities of TRANSD.LOG (Listing 4), you can add, extend, or delete entries. The LOOKUP and INDICP procedures of TRANST.LOG (Listing 3) let you access them.

TransAid works best with an 80-column display: Multiple definitions take up a great deal of screen space, and when you're translating an entire sentence, it's best to get the whole thing on a single screen. The program does run in 40-column mode, though—just change 78 to 38 in

line 8 of procedure PRINT.WD in the TRANST.LOG file (Listing 3).

Putting the Clues Together

After you boot Apple Logo II and TransAid as described above, a menu of options appears: translate a text, print a working translation, or work with the dictionary. Since your dictionary initially contains only one word, select "work with the dictionary" first. (Be patient—transitions to main-menu

Listing 3. TRANST.LOG handles translation.

Listing 1. STARTUP loads automatically upon booting.

```
TO BEGIN
ERPS
CT PR [ Loading necessary procedures.] PR [Please wait .....] PR []
LOAD "TRANSAID.LOG
TRANS.AID
END

MAKE "STARTUP [BEGIN]
```

Listing 2. TRANSAID.LOG contains initialization and termination procedures and TransAid's main menu.

```
TO TRANS.AID
CT PR [ Initializing.] PR [Please wait .....] PR []
INITIALIZE
IF NOT FILEP "VOCAB.LOG [MAKE "VOCAB [C[HET]] [C[THE]]]] OPEN "VOCAB.LOG SETWRIT
E "VOCAB.LOG PRINT, "VOCAB SETWRITE [] CLOSE "VOCAB.LOG]
OPEN "VOCAB.LOG SETREAD "VOCAB.LOG
MAKE "VOCAB RL
SETREAD [] CLOSE "VOCAB.LOG
MENU
END

TO GOODBYE
CT
PR [] PR [] PR []
PR [ Thank you for using TRANS.AID.]
WAIT 300
ERALL STOP STOP
END

TO GOTO :R
LOCAL "A LOCAL "B
MAKE "A [ Loading necessary procedures.]
MAKE "B [Please wait .....]
IF :R = 1 [ERPS CT PR [] PR :A PR :B LOAD "TRANST.LOG TRAN.TEXT]
IF :R = 2 [ERPS CT PR [] PR :A PR :B LOAD "TRANSP.LOG OUT.TEXT]
IF :R = 3 [ERPS CT PR [] PR :A PR :B LOAD "TRANSD.LOG DICTIONARY]
END

TO INITIALIZE
MAKE "INTEXT []
MAKE "TRANTEXT []
MAKE "CLOC [0 2]
MAKE "CLEARLINE [
]
END

TO MENU
LOCAL "R
CT MAKE "CLOC [0 2]
SETCURSOR [15 0] PR [TRANS.AID]
SETCURSOR [2 3] PR [Enter number of the option desired from the following list:]
SETCURSOR [4 6] PR [1 Translate]
SETCURSOR [4 8] PR [2 Print out working text]
SETCURSOR [4 10] PR [3 Work with dictionary]
SETCURSOR [2 14] PR [Press RETURN with no entry to quit]
SETCURSOR [4 20] TYPE [Choice ]
MAKE "R RL
IF EMPTY? :R [GOODBYE CT STOP]
IF NUMBERP FIRST :R [IF AND ( FIRST :R ) < 4 ( FIRST :R ) > 0 [GOTO ( FIRST :P )
] [MENU]] [MENU]
END
```

```
TO TRAN.TEXT
CT
SETCURSOR [15 0] PR [TRANSLATION]
SETCURSOR [2 3] TYPE [Enter sentence - Press RETURN]
SETCURSOR [0 2] MAKE "INSEN RL
IF EMPTY? :INSEN [MAIN.MENU STOP]
SETCURSOR [0 2] REPEAT 2 [PR :CLEARLINE]
MAKE "INTEXT LPUT :INSEN :INTEXT
MAKE "MDICN 1 MAKE "CLOC [0 2]
PRINT.TEXT :INSEN
GET.TRANS
TRAN.TEXT
END

TO MAIN.MENU
ERPS
CT PR [ Loading necessary procedures.] PR [Please wait .....] PR []
LOAD "TRANSAID.LOG
MENU
END

TO GET.TRANS
LOCAL "TRS
SETCURSOR [0 23] TYPE :CLEARLINE
SETCURSOR [0 20] PR [Enter translation:]
SETCURSOR [0 23] MAKE "TRS RL
IF EMPTY? :TRS [MAIN.MENU STOP]
MAKE "TRANTEXT LPUT :TRS :TRANTEXT
END

TO PRINT.TEXT :S
IF EMPTY? :S [STOP]
PRINT.WD (UPPERCASE FIRST :S)
PRINT.TEXT ( BUTFIRST :S )
END

TO PRINT.WD :W
LOCAL "INL LOCAL "DEF LOCAL "DICN LOCAL "DICL LOCAL "ML
MAKE "INL ( ( COUNT :W ) + 1 )
MAKE "DEF LOOKUP ( LIST ( LIST :W ) ) :VOCAB
MAKE "DICN COUNT :DEF
IF :DICN > :MDICN [MAKE "MDICN :DICN]
MAKE "DICL :DEF
IF :INL > :DICL [MAKE "ML :INL] [MAKE "ML :DICL]
IF ( FIRST :CLOC ) + :ML > 78 [MAKE "CLOC LIST 0 ( SUM ( LAST :CLOC ) :MDICN 3 )
MAKE "MDICN :DICN IF ( SUM ( LAST :CLOC ) 1 :MDICN ) > 17 [MAKE "CLOC LPUT 2 BU
TLAST "CLOC NEW.SCN]]
SETCURSOR "CLOC TYPE :W
PRINT.DEF :DEF ( LPUT ( ( LAST :CLOC ) + 2 ) BUTLAST :CLOC )
MAKE "CLOC FPUT ( ( FIRST :CLOC ) + :ML ) BUTFIRST :CLOC
END

TO PRINT.DEF :D :S
IF EMPTY? :D [STOP]
IF EQUALP ( FIRST :D ) (XXX) [STOP]
SETCURSOR :S TYPE ( FIRST :D )
PRINT.DEF BUTFIRST :D ( LPUT ( ( LAST :S ) + 1 ) BUTLAST :S )
END

TO NEW.SCN
LOCAL "R
SETCURSOR [4 23] TYPE [Press RETURN to continue translation.]
MAKE "R RL
CT SETCURSOR [15 0] PR [TRANSLATION]
END

TO CT.CHR :D
IF EMPTY? :D [OUTPUT 0]
OUTPUT ( SUM ( ( COUNT ( FIRST :D ) ) + 1 ) CT.CHR BUTFIRST :D )
END

TO MAXL :D
IF EMPTY? :D [OUTPUT 0]
IF ( CT.CHR FIRST :D ) MAXL BUTFIRST :D [OUTPUT CT.CHR FIRST :D] [OUTPUT MAXL
BUTFIRST :D]
END

TO LOOKUP :INW :D
IF EMPTY? :D [OUTPUT [XXXX]]
IF INDICP :INW FIRST :D [OUTPUT LAST FIRST :D]
OUTPUT LOOKUP :INW BUTFIRST :D
END

TO INDICP :INW :E
IF EMPTY? :INW [OUTPUT "FALSE]
IF MEMBERP FIRST :INW FIRST :E [OUTPUT "TRUE]
OUTPUT INDICP BUTFIRST :INW :E
END
```

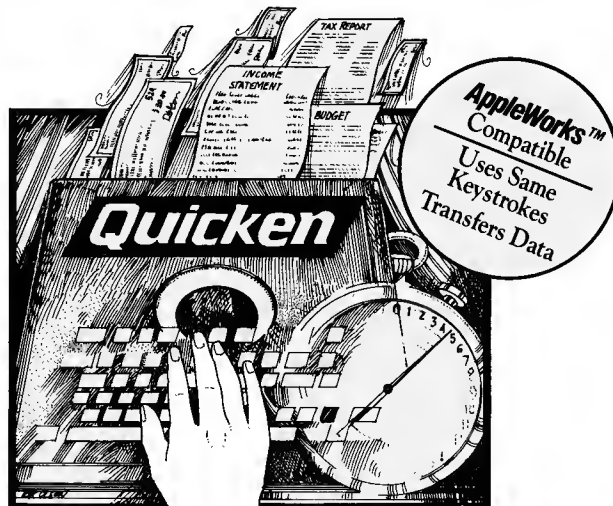

Free Trial! Call 800 624-8742

(California residents call 800 468-8481)

End Financial Hassles. \$49.



Who doesn't want to rid themselves of the hassles of paying bills, managing finances, and keeping records?



Finally, there's software so fast and so automatic that time and hassles evaporate.

Quicken® Eliminates Time & Hassle. You don't have to labor over routine finances any longer. Quicken is the breakthrough software that eliminates the hassles of the routine financial chores you do every month.

- Automates bill paying. Eliminates rewriting the same checks every month.
- Instantly organizes financial records. Eliminates errors.
- Categorizes expenses automatically for business, taxes, budgeting. Eliminates manual bookwork.
- Reconciles your bank statement for you. Actually finds and fixes mistakes.
- Transfers your finances into your own AppleWorks spreadsheets. Automatically gives you custom-tailored reports, P&L's, budgets, and much more.

For Every Business & Home. Quicken works with **any** accounts from **any** bank, S&L, or credit union. It's the only system recommended by major banks across the U.S., including Wells Fargo, Shawmut, Mellon, Texas Commerce, Bank of Hawaii, Manufacturers National, First National of Maryland, United Banks of Colorado, Fort Wayne National, Fairbury State, and FirstTier Banks. No modem is used.

Intuit, 540 University Avenue, Palo Alto, CA 94301 (415) 322-0573

Compatibility: Apple® IIc and IIe (IIe requires extended 80-column card) and IBM® PC, XT, AT, PCjr. One or two floppy disk drives, or UniDisk™ 3.5. Any printer. No modem needed. To order checks, fill out form in Quicken box. Handles an unlimited number of checking and expense accounts.

Quicken is a registered trademark of Intuit. Apple is a registered trademark of Apple Computer, Inc. AppleWorks and UniDisk are trademarks of Apple Computer, Inc. IBM is a registered trademark of International Business Machines Corp.

CRITICS HAIL A BREAKTHROUGH

"Thanks to Quicken, I'm automating my personal checking account. I've never seen such an easy-to-use manual or software that's so simple to use."

—Martin Blumenthal, InCider Magazine

"With the power of AppleWorks so readily available, it's more than good—it's indispensable. Home and small business checking software used to be too expensive, too hard to use, and too rigid, and it took too long to use. Quicken has changed all that."

—Ken Landis, A+ Magazine

"Now there is a program that truly saves time when it comes to paying bills and keeping track of tax-deductible items; and that program is Quicken."

—Parents Magazine

"Until now you might have been hesitant to consider using a personal computer system to balance your checkbook. Hesitate no longer! Quicken is more than a checkbook-balancing program."

—Cynthia Field, InfoWorld

"Extremely simple and fast."

—Esther Dyson, Release 1.0

"The area of checking and small account management has been most disappointing for me. Many products promise more than they deliver or deliver only after a great deal of labor. Quicken is a wonderful exception to this otherwise bleak landscape."

—Richard Katz, UCLA PC Users Newsletter

TRY QUICKEN FREE FOR 30 DAYS

CALL 800 624-8742 (CA residents call 800 468-8481) OR send this coupon with payment.

Please send me _____ copies of Quicken at \$49.00, plus \$3.00 shipping & handling, plus sales tax if in CA, CO, DE, HI, IN, MA, MD, MI, NE, PA, TX.

My payment will not be processed for 30 days after receipt of Quicken. If Quicken doesn't save me hours of financial hassles, I can return it within 30 days and my payment will be returned.

☐ I enclose a check for _____. Please charge my ☐ Visa ☐ Mastercard

Card # _____ Exp. Date _____

Name: _____

Address: _____

City: _____

State: _____

Zip: _____

Daytime Phone: _____

No P.O. Boxes, please. No COD or purchase orders.

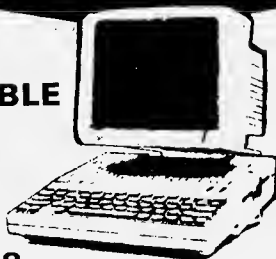
I 1186

★ APPLE ★ COMPUTER

APPLE
COMPATIBLE

INCLUDES
DRIVE

LASER 128



Compare
AT \$850

\$395

FREE
HOME
TRIAL

FREE DELIVERY

MONITOR



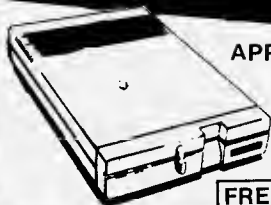
GREEN SCREEN

RETAIL
\$150

FREE HOME
TRIAL

\$69

DISK DRIVE



APPLE II E/C

RETAIL
\$249

\$189

FREE HOME TRIAL

MODEM

\$98

1200 BAUD
HAYES COMPATIBLE



FREE TRIAL PERIOD

PRINTER



RETAIL \$349

\$149

NEAR LETTER QUALITY

PRO-TECH-TRONICS

6870 Shingle Creek Pkwy. #103, Mpls., MN 55430

QUICK DELIVERY



1-800-345-5080

IN MINNESOTA (612) 560-6603

selections are the slowest processes in TransAid, because a whole new program segment is loaded for each selection.) From the dictionary-utilities menu, select "add to dictionary." (Other options let you delete a word from the dictionary or print a hardcopy of the current dictionary.)

To add a word to your dictionary, first type in the new term in the target language. Note that TransAid lets you include different "forms" of the new word (several synonyms, for instance) in a single entry. You can also enter more than one definition, each made up of several words, if you like. (Try to keep them succinct, though, to save space on the translation screen.)

Figure 2 shows your computer screen following completion of a typical entry (the Dutch word *neef*, meaning "nephew," or "cousin" in this case).

Throughout the program, simply pressing the return key with no entry either moves you along in a procedure or takes you to the next menu. TransAid implements this consistent, simple user interface by collecting keyboard input through its READLIST operation, then testing for a blank list.

When you've added a few words to your dictionary, try a translation. Press the return key twice with no entry to go back to the dictionary-utilities menu, then to the main menu.

Select the "translate" option, then simply type in a sentence from your target-language text and press the return key. (Omit punctuation, or separate marks from words with a space.) TransAid reprints the input sentence and lists under each word a number of possible meanings if you've included the term in your dictionary.

Figure 3 shows the computer screen following translation of the Dutch sentence *Gebruik bij het schoonmaken van de helm alleen warm water in zachte zeep*. Using the clues listed and considering the sentence in context, type in your best try at a translation: "Use only warm water and ??? soap to clean the helmet."

Press the return key to save the foreign-language sentence and the translation you came up with. Then type in another sentence, or press the return key with no entry to go back to the main menu.

The third main-menu option, "print working text," gives you a list of your foreign-language-text sentences followed by the corresponding translations you've put together. From the main menu, press the return key with no selection to exit to Logo.

Translating from the Top

Looking up each word in a dictionary—paper or electronic—isn't the best way to translate a substantial body of text. Skim the whole passage to get a general idea of its topic, then begin working on individual paragraphs and sentences, fitting them into the overall theme. Consider each sentence in context. It's at this stage that TransAid will be most helpful to you. To borrow a phrase from another sort of language, think of it as "top-down" programming: Begin with the "big picture" and keep filling in successive levels of detail until you get down to specific words. ■

Glenn Thomas is a mechanical engineer with the U.S. Navy. Write to him at 4 Washington Circle, Alexandria, VA 22305.

Listing 4. TRANSD.LOG includes dictionary utilities.

```

TO INDICP :NW :E
IF EMPTY :NW [OUTPUT "FALSE"]
IF MEMBERP FIRST :NW FIRST :E [OUTPUT "TRUE"]
OUTPUT INDICP BUTFIRST :NW :E
END

TO DROP.DEF :R :VOCAB
IF INDICP ( FPUT :R [ ] ) ( FIRST :VOCAB ) [OUTPUT BUTFIRST :VOCAB]
MAKE "VOCAB FPUT ( LAST :VOCAB ) ( BUTLAST :VOCAB )
OUTPUT DROP.DEF :R :VOCAB
END

TO UPDATE
IF FILEP "VOCAB.LOG [ERF "VOCAB.LOG]
OPEN "VOCAB.LOG SETWRITE "VOCAB.LOG
PRINT :VOCAB
SETWRITE [ ] CLOSE "VOCAB.LOG
END

TO ADD.TO.DEF :NW :ND :VOCAB
IF INDICP :NW ( FIRST :VOCAB ) [OUTPUT FPUT ( LIST :NW ( SE ( :ND ) ( FIRST BUTF
FIRST FIRST :VOCAB ) ) ( BUTFIRST :VOCAB ) STOP]
OUTPUT ADD.TO.DEF :NW :ND ( FPUT ( LAST :VOCAB ) ( BUTLAST :VOCAB ) )
END

TO GET.NEW.DEF :ND
LOCAL "R
TYPE ( Definition: ) MAKE "R ( LIST.UPPERCASE FIRST RL )
IF EMPTY :R [OUTPUT :ND]
MAKE "ND LPUT :R :ND
OUTPUT GET.NEW.DEF :ND
END

TO LOOKUP :NW :D
IF EMPTY :D [OUTPUT [XXXX]]
IF INDICP :NW FIRST :D [OUTPUT LAST FIRST :D]
OUTPUT LOOKUP :NW BUTFIRST :D
END

TO DEL.FM.DIC
LOCAL "R LOCAL "D
CT SETCURSOR [9 0] PR [DELETE FROM DICTIONARY]
SETCURSOR [2 3] PR [Enter word to be deleted.]
SETCURSOR [2 5] TYPE [Word:]
SETCURSOR [9 5] MAKE "R ( LIST.UPPERCASE FIRST RL )
IF EMPTY :R [DICTIONARY STOP]
MAKE "D LOOKUP ( FPUT :R [ ] ) :VOCAB
IF EQUALP ( FIRST :D ) [XXXX] [PR [ ] TYPE :R PR [ is not in the dictionary.] WAIT
240 STOP]
MAKE "VOCAB DROP.DEF :R :VOCAB
UPDATE
DEL.FM.DIC
END

TO ADD.TO.DIC
LOCAL "R LOCAL "NW LOCAL "D LOCAL "ND
CT SETCURSOR [12 0] PR [ADD TO DICTIONARY]
SETCURSOR [2 3] PR [Enter word to be added]
SETCURSOR [2 5] TYPE [Word:]
SETCURSOR [9 5] MAKE "R ( LIST.UPPERCASE FIRST RL ) MAKE "NW [ ] MAKE "NW FPUT :R
:NW
IF EMPTY :R [DICTIONARY STOP]
SETCURSOR [2 3] PR ( SE [Enter additional forms of] :R [ to be added] )
PR ( RETURN with no entry if no additional forms ) ] PR :CLEARLINE
MAKE "NW GET.ADD.FORMS :NW
MAKE "D LOOKUP :NW :VOCAB
IF NOT EQUALP ( FIRST :D ) [XXXX] [PR [ ] TYPE :R PR [ is already in the dictionary
.] ] PR [New definitions will be added.] ]
PR [ ] PR [Enter definitions -- one at a time.]
PR ( RETURN with no entry to end. ) ] PR [ ]
MAKE "ND [ ] MAKE "ND GET.NEW.DEF :ND
IF EQUALP ( FIRST :D ) [XXXX] [MAKE "VOCAB LPUT ( LIST :NW :ND ) :VOCAB] [MAKE "V
OCAB ADD.TO.DEF :NW :ND :VOCAB]
UPDATE
ADD.TO.DIC
END

TO GOTO.DIC :R
IF :R = 1 [ADD.TO.DIC STOP]
IF :R = 2 [DEL.FM.DIC STOP]
IF :R = 3 [PRINT.DIC :VOCAB STOP]
END

TO DICTIONARY
LOCAL "R
CT SETCURSOR [9 0] PR [DICTIONARY UTILITIES]
SETCURSOR [4 6] PR [1 Add to dictionary]
SETCURSOR [4 8] PR [2 Delete from dictionary]
SETCURSOR [4 10] PR [3 Print out dictionary]
SETCURSOR [4 14] PR [RETURN with no entry to exit dictionary procedures]
SETCURSOR [4 20] TYPE [Choice]
SETCURSOR [12 20] MAKE "R RL
IF EMPTY :R [MAIN.MENU STOP]
IF MEMBERP FIRST :R [IF AND ( FIRST :R ) 4 ( FIRST :R ) > D [GOTO.DIC ( FIRST
:R ) ] [DICTIONARY] ] [DICTIONARY]
END

TO PRINT.DIC :D
CT
LOCAL "E LOCAL "W
OPEN 1 SETWRITE 1
PR [ ]
REPEAT ( COUNT :D ) [MAKE "E FIRST :D MAKE "D BUTFIRST :D MAKE "W FIRST :E REPEA
T ( COUNT :W ) [PR FIRST :W MAKE "W BUTFIRST :W] MAKE "W FIRST BUTFIRST :E REPEA
T ( COUNT :W ) [TYPE [ ] PR FIRST :W MAKE "W BUTFIRST :W]]
SETWRITE [ ] CLOSE 1
DICTIONARY
END

TO MAIN.MENU
ERPS
CT PR [ Loading necessary procedures.] PR [Please wait .....] PR [ ]
LOAD "TRANSAID.LOG
MENU
END

TO GET.ADD.FORMS :NW
LOCAL "R
TYPE [Additional form:] MAKE "R RL
IF EMPTY :R [OUTPUT :NW]
MAKE "NW LPUT :R :NW
OUTPUT GET.ADD.FORMS :NW
END

```

Listing 5. TRANSP.LOG lets you print your foreign-language sentences with corresponding translations.

```

TO PR.TX.LIST :L
REPEAT ( COUNT :L ) [PR FIRST :L MAKE "L BUTFIRST :L]
PR [ ]
END

TO OUT.TEXT
CT SETCURSOR [9 0]
OPEN 1 SETWRITE 1
PR [TRANS.AID TRANSLATION] PR [ ]
PR [Input text:] PR [ ]
PR.TX.LIST :INTEXT
PR [Translation:] PR [ ]
PR.TX.LIST :TRANTEXT
SETWRITE [ ] CLOSE 1
MAIN.MENU
END

TO MAIN.MENU
ERPS
CT PR [ Loading necessary procedures.] PR [Please wait .....] PR [ ]
LOAD "TRANSAID.LOG
MENU
END

```

Figure 1. TransAid program flowchart.

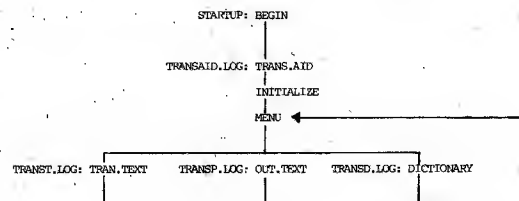


Figure 2. Entering terms and definitions into your dictionary.

ADD TO DICTIONARY

Enter additional forms of NEEF to be added
(RETURN with no entry if no additional forms)

Additional form: <RETURN>

Enter definitions -- one at a time.

(RETURN with no entry to end.)

Definition: cousin <RETURN>

Definition: nephew <RETURN>

Definition: <RETURN>

Figure 3. The TransAid translation screen lists individual definitions and lets you enter an appropriate translation.

TRANSLATION									
GEbruik	BIJ	HET	SCHOONMAKEN	VAN	DE	HELM	ALLEEN	WARM	WATER
USE	NEAR	THE	TO CLEAN	OF	THE	HELMET	ALONE		
CUSTOM	AT					BEACH-GRASS	ONLY		
	WITH								
	BY								
	PRESENT								
	IN ADDITION								
	SEE								
IN	ZACHTE	ZEEP							
AND		SOAP							

Enter translation:

Computer Network

CALL TODAY 1-800-621-0937

FREE Updates on Ramcard Software* • FREE Catalog with every order
10 DAY 100% MONEY BACK GUARANTEE ON ANY HARDWARE PRODUCT*

*In 10 days of receipt we will refund your money if you're not 100% satisfied with any Hardware Product shipped to you, (less shipping).

CHECKMATE TECHNOLOGIES

Multiram IIe 64k	\$ 119
Multiram IIe 320k	CALL
Multiram IIe 576k	CALL
Multiram IIe 768k	CALL
Multiram IIe 64k w/RGB	158
Multiram IIe 320k w/RGB	CALL
Multiram IIe 576k w/RGB	CALL
Multiram IIe 832k w/RGB	CALL
Multiram IIe 1meg w/RGB	CALL
16 bit Microprocessor IIe	159
Multiram IIc 256k CX	179
Multiram IIc 512k CX	CALL
Multiram IIc CX kit 16 bit	129
Pascal RAM software	20
CP/M RAM software	20
256K Ram Chips 150ns	CALL
64k Ram Chips 200ns	CALL
Please Call for Current Prices	



NEW!

- 65C02 Processor
- Full 128k of RAM
- Built-in 5.25-inch Disk Drive
- Most Apple IIc Compatible on the Market
- External Apple II-compatible expansion slot
- 10-key numeric keypad
- Mouse and Modem Interface
- Serial & Parallel interface

Laser 128
\$395

AppleWorks Compatible

APPLIED ENGINEERING

Ramworks II 64k	\$ 140
Ramworks II 320k	CALL
Ramworks II 576k	CALL
Ramworks II 832k	CALL
Ramworks II 1 meg.	CALL
Ram Factor 256 to 1meg	CALL
Z-RAM II 256k //c	CALL
Z-RAM II 512k //c	CALL
Z-RAM II 768k //c	CALL
Z-RAM II 1 meg //c	CALL
Veilmaster (+/E)	106
Z-80 Plus (+/E)	106
IIc System Clock	66
Timemaster II H.O.	101
TRANSWARP	220
16 Bit Option for IIc/IIe	70
Z-80c card for IIc	115
16k Ram card for II+	56
65C816 16 Bit Option IIe	139

NEW! MONTHLY SPECIAL
SIDEWAYS \$36.95

Sideways Printing for APPLEWORKS (ProDOS/DOS)

MONTHLY SPECIAL
FontWorks \$35.95

Add Different Fonts & Sideways Printing to AppleWorks

BUSINESS

ASCII Express ProDOS /DOS	ea 77.95
Bank Street Mailer	40.99
Bank Street Writer 64K/128K	ea 40.99
Bank Street Speller	40.99
Bank Street Filer 64K/128K	ea 40.99
BPI GA,AR,AP,PAY Pro	ea 208.95
Bookends ProDOS-2C/2E-128	64.95
Crosstalk	109.00
Dollars & Sense (IIc/IIe-128k)	87.95
Fontrix	63.00
The Graphics Department	65.00
Manage Your Money	102.00
MouseWrite 2C/E-ENH 128	72.00
Merlin Pro 2C/2E-128K	64.95
PFS 1st Success F/R/W Pro-128K	126.00
PFS File & Report	ea 88.50
PFS: Graph	88.50
PFS Write ProDOS-2C/2E-128K	68.50
PROFILER	68.95
Supercalc 3e 2C/2E ENH	99.95
Think Tank	84.95
VIP Professional IIe/IIc 256k	149.95
Word Perfect	98.00
Your Personal NetWorth	50.00

APPLEWORKS

AutoWorks	27.95
FontWorks	37.95
FormsWorks	32.95
GraphWorks	55.95
HabaMerge	48.50
Hebe Templates	19.95
InfoMerge	39.95
MacroWorks	22.95
MegeWorks	68.95
Pinpoint 2C/2E-Enh 128k ProDOS	34.95
Pinpoint Tool Kit	25.95
Pinpoint Pop-up Speller Checker	34.95
Pinpoint Print Enhancement	13.95
Pinpoint & Pop-up Speller Combo	72.95
Point to Point	85.95
Pinpoint Modern Enhancement	19.95
Pinpoint IIc Upgrade kit	19.95
Quicken	52.95
ReportWorks	68.95
Sensible Speller DOS or ProDOS	ea 71.00
Sensible Grammar	59.95
Sideways ProDOS NEW!	38.95
SpellWorks	28.95
ThinkWorks	95.00

HOME-HOBBY

Copy II + or Choplitter	ea 22.50
Dazzle Draw	35.15
Fantavision	28.95
F-15 Strike Eagle or Lode Runner	ea 20.50
Flight Simulator II	29.95
GATO	20.95
Graphics Expender Reg. Printshop	23.95
Home Accountant	39.00
King's Quest II III (C/E-128K)	ea 29.30
Mind Prober	33.95
Newsroom clip art 1	16.25
Newsroom +E/C	30.50
One on One or Silent Service	ea 24.95
Pinball Construct	25.00
Printshop +C/E	28.75
Printshop GL 1,2,3	ea 14.25
Printshop Refill	12.25
Printshop Companion	22.50
Sargon III (II, Mec)	29.30
Seven Cities-Gold or Skyfox	ea 25.50
Super Zaxxon	19.50
Star Trek-Kobayashi	24.50
Turbo Pascal (Reg. CP/M)	35.95
Ultima III / IV	34.95
Winter Games or Summer Games	ea 24.00

EDUCATION

Early Games for Young Children	16.00
Mester Type	23.45
Math Blaster	29.30
Typing Tutor III	29.30
Word Attack	29.30
Speed Reader II	41.00
Mission Algebra	28.00
Spinnaker Full Line	\$CALL
Stickybees ABC's/Math/etc	ea 24.00
Where is Carmen San Diego?	24.25
Algebra I thru IV	ea 26.95
Fraction Fever	17.95
Visible Computer 6502	37.95
Spell It	28.69
Snooper Troops 1 or 2	22.95
Rocky's Boots	31.95
Spellchecker or Turtle Tracks	24.00
Charlie Brown's ABC's	29.95
Beneath Apple Pro DOS	16.95
Story Maker	24.50
Turbo Tutor	24.95
Sticky Beer Reading	23.99
Certificate Maker	32.95

DISKETTES

Elephant SS/DD	9.95
Elephant SS/DD	12.95
Elephant DS/DD	15.95
Verbatim SS/DD	14.95
Verbatim DS/DD	16.00
Diskettes 3 1/2 SS/DD	24.95
Diskettes 3 1/2 DS/DD	29.95
Diskette Cleaner kit 5.25	7.95
Disk Notcher (use both sides of disk)	9.95
Diskette Cerousal (holds 72) 5.25	15.95
Disk Drives	
Disk Drive IIe Applied Eng.	119.00
Disk Drive Controller AE	67.95
Mitac Disk Drive IIc	129.00

PRINTERS

Epson LX-80	279.95
Epson FX-85 80 col	419.95
Epson FX-286 136 col	809.95
Epson LO 1000 Ser. & Per.	759.95
Epson LO 800 Ser. & Per.	619.95

RIBBONS

Imagewriter	3.00
Prowriter 8510	3.00
Epson FX/RX 80	3.00
Epson FX/RX 100	4.75
Epson LX-80	3.50
Okidata 192	4.95

COLOR RIBBONS CALL

HARDWARE

Amdex 300 12"	123.00
Cables for Modems & Printers	ea 24.95
Color 300	225.00
Color 800	399.00
RGB Interface	127.00
A+ Mouse or Serial Grappler	ea 79.00
Kret Quick Stick	49.00
Grappler	72.00
Buffered Grappler + 16K	131.50
Hot Link, S-P cable for IIc	44.00
Grappler C	75.00
A-B switch Box 25pin	59.95
A-B Switch Box 36pin	99.95
Mitac Monitor 9"	105.00

HARDWARE

Koala Pad IIe - IIc	75.00
UltraTerm 132 Col. (II+/IIe)	179.00
Mach III w/Fire (II+/IIe)	32.25
IIe 80Ram Card	55.95
System Server	62.00
The Cricket IIc	111.00
Thunderclock +	103.00
Disk Notcher	9.95
X-10 Powerhouse Interface kit E/C	55.95
MODEMS	
Hayes Smartmodem 1200	358.00
Hayes Smartmodem 300	132.00
Micromodem IIe w/Smartcom I	129.00
Hayes 2400 External Modem	577.00

NO ADDITIONAL CHARGES FOR VISA & MASTERCARD ORDERS

For fast delivery send cashier's check, certified check or money order. Personal and company checks allow 15 days to clear. Shipping - Software (\$3.00 min.). Shipping - Hardware (please call) Sorry No C.O.D.'s. School P.O.'s accepted, terms net 15. Am. Ex.-5%. *NM Res. add 4.75% sales tax. Prices & availability subject to change without notice. All products are new and include factory warranty, therefore All software sales are final. We do not guarantee compatibility. Products purchased in error subject to 15% restocking fee. Defective merchandise replaced with same item only. Foreign add 18% (\$25 min). Not Responsible for typographical errors. Mail Orders to COMPUTER NETWORK, 3204 NATL. PARKS HWY., CARLSBAD, NM 88220
 *To update your Multiram, RamWorks, & Z-RAM software Disk, please send a Diskette with a self stamped package for Return. All RETURNS must include an RMA #, call before shipping products.

TRACE YOUR ROOTS

*Journey into your family's past—with
AppleWorks as your guide.*

by Weston George

Tracing the history of your own family involves plot twists as intriguing as any novel. With AppleWorks leading the way and eliminating the drudgery, you're free to savor the insights, surprises, and mysteries of the unfolding story.

For example, the search into my own ancestral past led to the enigma of my great-great-grandfather, a man with the unlikely name of Bushrod Craven.

Bushrod was at the end of a strand that pulled me through time and space—from the present back to 1807, from Colorado through Iowa, Illinois, and Kentucky to Loudoun County, Virginia. There it stopped. Just who were Bushrod Craven's proud parents?

For the moment, that remains uncertain, but the investigation has turned up an interesting detail from a couple of generations earlier: One Hanna Bushrod married a man called John Augustine Washington in Virginia and gave birth in 1762 to a son they named Bushrod. John had a brother named George, who died in 1799 after a distinguished military and political career. Yes, Bushrod's uncle was George Washington. While I haven't yet documented my connection to the father of our country, AppleWorks is handling the routine work and keeping track of the clues—so there's the tantalizing prospect that I might.

My situation isn't unusual—anyone who explores his or her ancestry will turn up equally enticing trails to follow. In fact, the problem will soon become how to plan the trip so that you don't get hopelessly lost in a maze of fascinating detail. What I offer in this article is a strategy for your investigation and tips on using AppleWorks to implement it.

While the satisfaction of solving the puzzle and the thrill of unexpected discovery may be enough motivation for some of us, others will want more practical reasons for recording their genealogy. It's one way to increase your self-understanding, and it's a chance to contribute to recorded history by preserving unique information that would otherwise be lost. In the process, you'll produce organized data that will aid other researchers.

Figure 1. Individual worksheet as it appears in the AppleWorks data base.

```

10 File: INDVWS
Report: IndividualWS
INDIVIDUAL WORKSHEET

CODE NUMBER: 24
NAME (in full): Bushrod W. Craven
BIRTH DATE: 1807
BIRTH PLACE: Loudoun County, Virginia
OCCUPATIONS(S): Iowa pioneer, farmer,
OCCUPATIONS(S): Judge, commissioner
MILITARY SERVICE: unknown
DEATH DATE: 1878, October
BURIAL DATE: unk
BURIAL PLACE: Russell cem., Milton, IA
MARRIAGE DATE: 1830, August 19
MARRIAGE PLACE: Flemingsburg, Kentucky
SPOUSE'S NAME: Nancy Tracy
SPOUSE'S CODE NO.: 25
FATHER'S NAME: unk

FATHER'S CODE NO.: 48
MOTHER'S NAME: unk
MOTHER'S CODE NO.: 49
RESIDENCE 1: Loudoun County, Virginia
RESIDENCE 2: Kentucky
RESIDENCE 3: Indiana
RESIDENCE 4: Illinois
RESIDENCE 5: Davis County, Iowa
RESIDENCE 6: Milton, Iowa
INFO.: 1st settler, Davis County, IA in
INFO.: 1838, elected judge when county
INFO.: established in 1843
SOURCES: family records, 1850 census,
SOURCES: Pioneer Hist. of Davis Cty, IA
SOURCES: Kentucky marriage record

```

Figure 2. Family group worksheet as it appears in the AppleWorks data base.

```

File: FAMGRPWS
Report: famgrp3a
Page 1
6/16/86

FAMILY HEAD CODE NO.: 24
HUSBAND (full name): Bushrod W. Craven
RESIDENCES PRIOR TO: Loudoun county, KY
MARRIAGE WITH DATES: circa 1807
WIFE (maiden name): Nancy Tracy
WIFE'S CODE NO.: 25
MARRIAGE DATE: 1830, August 19
MARRIAGE PLACE: Flemingsburg, KY
CHILD (name): John A. (code no. 12)
  Birth date & place: 1831, unk
  Death date & place: 1871, Iowa
  Marriage: Sarah J. Wandel, 2/28/1854
CHILD (name): James E.
  Birth date & place: 1833 Montgomery, IN
  Death date & place: unk
FAMILY HEAD CODE NO.: continuation: 24
HUSBAND (full name): Bushrod W. Craven
RESIDENCES PRIOR TO: (this is part two
MARRIAGE WITH DATES: of record 24 to
WIFE (maiden name): continue listing of
WIFE'S CODE NO.: children. See part
MARRIAGE DATE: one for data on husband
MARRIAGE PLACE: and wife)
CHILD (name): George W.
  Birth date & place: 1840, Iowa
  Death date & place: 1865, Atlanta, GA
  Marriage: unmarried
CHILD (name): William H.
  Birth date & place: 1842, Iowa
  Death date & place: 1881, Milton, IA

Marriage: see file 24
CHILD (name): Margaret
  Birth date & place: 1836
  Death date & place: unk
  Marriage: unk
CHILD (name): Caroline
  Birth date & place: 1837, Illinois
  Death date & place: unk
  Marriage: unk
RESIDENCES: KY, Montgomery, IN; IL;
RESIDENCES: Davis county, IA
OTHER:
OTHER:
SOURCES: family records; Flemings, KY;
SOURCES: 1850 census
Marriage: see file 24
CHILD (name): Lewis P.
  Birth date & place: 1843, Iowa
  Death date & place: unk
  Marriage: unk
CHILD (name):
  Birth date & place:
  Death date & place:
  Marriage:
RESIDENCES:
RESIDENCES:
OTHER: George & Lewis served in Union
OTHER: army. George died in battle.
SOURCES: fam. rec.; Military Service
SOURCES: Records, National Archives

```

Figure 3. Five-generation ancestral chart as it appears in the AppleWorks spreadsheet.

```

File: anchart
Page 1
FIVE GENERATION ANCESTRAL CHART

-----16 ? George
B Edmond      Born:
George       Died:
Born: 1849    17 ?
Wales        Born:
Died: 1986   Died:
Emporia, KS
-----18 ? Williams
9 Elizabeth   Born:
Williams      Died:
Born:         19 ?
Wales        Born:
Died: 1986   Died:
Emporia, KS
-----20 Alec Fleming
10 John W.    Born:
Fleming       Died:
Born: 1858    21 Mollie Tipton
              Born:
              Died:
Died: 1915   22 Peter Leuhr
Emporia, KS   Born:
              Died:
11 Maggie     Born:
Leuhr         Died:
Born: 1865    23 Katherine Dittmer
Germany       Born:
Died:         Died:
Newton, KS
-----24 Bushrod Craven
12 John A.    Born: 1807, Virginia
Craven        Died: 1878, Iowa
Born: 1831    25 Nancy Tracey
Milton, IA    Born: 1810, Kentucky
Died: 1871    Died:
Milton, IA
-----26 Charles Wandel
13 Sarah Jane Born: 1804, New York
Wandel        Died:
Born: 1836    27 ?
Iowa          Born:
Died: 1871    Died:
              28 ? Hagen
              Born:
              Died:
Born: 1842    29 ?
Dayton, OH    Born:
Died:         Died:
              30 ? Hughes
              Born:
              Died:
15 Annis      Born:
Hughes        Died:
Born: 1851    31 ?
Indianapolis Born:
Died:         Died:

```

Whatever your motivation, you'll soon confront a mob of ancestors and the need to establish some limits and goals. A realistic long-term goal is to complete a five-generation ancestral chart and files of supporting data: names and birth, death, and marriage data for 30 ancestors and their offspring. This is no small task, but you did say you were looking for something worthwhile to do with your computer, didn't you?

Keeping a Log

Before embarking on this voyage of discovery, like Captain Kirk, you'll need a log in which to record your adventures. Experienced genealogical explorers, such as the staff of the American Genealogical Research Institute, recommend two basic forms: the individual worksheet (see **Figure 1**) and the family group worksheet (**Figure 2**).

For every ancestor you come across, you'll prepare an individual worksheet. On the family group worksheet you'll record data for husband, wife, and their children. If an ancestor has more than one spouse (usually serially, but not always), complete a family group worksheet for each marriage or other relationship that produced offspring.

A five-generation ancestral chart (**Figure 3**—also known as a family tree or pedigree) is the third blank form you'll fill in as your exploration progresses, and completing it accurately may be your ultimate goal.

If anything was ever made for genealogical recordkeeping, it's AppleWorks' data-base function. You can design your own file equivalents of the two forms; easily enter, change, and add data; and, most importantly, quickly find and relate names, dates, places, and other information. If you need help setting up your system, run through the data-base sections of the *AppleWorks Tutorial and Reference Manual*.

Since you probably won't be taking your computer with you on research trips, you'll also need printed, blank individual and family group worksheets. You can produce the masters with the AppleWorks word processor (see **Figures 4 and 5**), then photocopy a supply.

Now what about the ancestral chart? Looking at **Figure 3**, you'll note that it consists of rows and columns—a spreadsheet. With that, we've made genealogical use of all three integrated functions and temporarily converted AppleWorks to AncestorWorks.

Planning Your Strategy

So where do you start?

Record the facts in your AppleWorks data-base version of the individual worksheet. If you're married, also enter your data into a family group worksheet with yourself or your spouse as head of family. The information on your own individual and family worksheets is what future genealogists will know about you. It's your chance to set the record straight.

Be scrupulous about checking your facts. It's better to record nothing than to record an error. For example, if you're uncertain about the town in which you lived when you were six, don't guess—find a reliable source and document it.

After recording all the facts of which you're sure, proceed to your parents and closest relatives and document their recollections and records. The basic idea is to record the more recent past first.

Having gathered all the information you can directly from your living relatives, you'll still have a lot of blanks to fill and uncertain facts to confirm. The first records you should search are those belonging to your family—Bibles, diaries, letters, school diplomas, passports, ledgers, photo-

Z-RAM® gave the IIc guts. Now comes the glory.

No jumper wires, clips or drive removal—so installation takes only a few minutes and a screwdriver

Optional 65C816 16-bit processor plugs right in with no other component changes

Up to 1 MEG memory (you choose how much) lets you store, load and run programs up to 30 times faster

Printer buffer lets you continue working while printing AppleWorks files

Real-time clock displays time and date on AppleWorks™ screens and files, and is PRO-DOS compatible for use with other PRO-DOS software

Pinpoint's AppleWorks accessories with RAM enhancement software—*together a \$118 value*—only \$79 if ordered with Z-RAM Ultra

Run CP/M® programs with Z-RAM Ultra's built-in Z-80B microprocessor

Introducing Z-RAM Ultra.

Your Apple IIc is about to become a computer you never dreamed it could be. Because the most exciting chapter in the Z-RAM history of turbo charged IIc's has just been written. It's called Z-RAM Ultra. And it takes IIc expansion into a whole new realm.



"I recommend Applied Engineering products wholeheartedly." (Of course, Steve's IIc has a Z-RAM installed.)

Steve Wozniak, the creator of Apple Computer

Ultra smart. Ultra speedy.

With any Z-RAM Ultra, your AppleWorks word processor capacity will instantly increase from 2,250 lines to over 15,000 and the maximum number of records from 1,350 to over 25,000. Available desktop memory rockets to over 700K with *all* of AppleWorks loaded into RAM. Z-RAM Ultra even expands the clipboard and autosegments large files so they can be saved on two or more disks. Nothing else comes close to enhancing AppleWorks like this!

Z-RAM Ultra will completely load your programs into RAM, then run them up to 30 times faster. And our included RAM disk is compatible with Applesoft, PRO-DOS, DOS 3.3, PASCAL and CP/M.

That's just the beginning.

Memory and speed are only part of the story. Z-RAM Ultra 3 also has a built-in Z-80B microprocessor that allows it to run CP/M programs (the largest body of software in existence)—including WordStar, dBase II, Turbo PASCAL, Microsoft BASIC and more. A PRO-DOS compatible battery backed-up clock not only displays time and date on the AppleWorks screen, but will time and date

stamp any PRO-DOS file. And a printer buffer handles printing of AppleWorks files so you can continue working.

Patented technology and a computer-aided design allow Z-RAM Ultra to run with extremely low power consumption—less than half the power drain of other memory cards. And all the IC chips are in sockets.

Call to order or for more information!

Z-RAM Ultra comes with simple instructions, RAM disk software, Z-80 operating system, CP/M manual, a five-year "hassle-free" warranty, and all the AppleWorks enhancements we're famous for.

If you want to run CP/M software, but don't need more memory, we suggest our Z-80C card, priced at only \$159.

CALL 214-241-6060 TO ORDER TODAY 9 a.m. to 11 p.m. seven days, or send check or money order to Applied Engineering, MasterCard, Visa and C.O.D. welcome. Texas residents add 5% sales tax. Add \$10.00 outside U.S.

Prices:

Z-RAM Ultra 3 (With memory, clock and CP/M)		
256K—\$329.00	512K—\$379.00	1 MEG—\$459.00
Z-RAM Ultra 2 (With memory and clock)		
256K—\$269.00	512K—\$319.00	1 MEG—\$399.00
Z-RAM Ultra 1 (Memory only—expandable to 512K)		
256K—\$199.00	512K—\$249.00	
Pinpoint with RAM enhancement software \$79.00		
(List price \$118)		
16-bit 65C816 Upgrade \$99.00		

AE Applied Engineering
The Apple enhancement experts.

P. O. Box 798, Carrollton, TX 75006

(214) 241-6060

CP/M is a registered trademark of Digital Research, Inc.

graphs, samplers and quilts, and awards.

If genealogy were as orderly as a courtroom trial, we could move progressively outward from family to town, county, state, national, and international records. But it's much more like one of Sam Spade's capers—order and logic often give way to intuition and the unconventional. Inevitably you'll have to write to obtain needed data. You can prepare form letters with the AppleWorks word processor, so that requesting information is as simple as inserting the appropriate specifics and a new address. You can also make up questionnaires to send to relatives living too far away for a personal interview.

One stop you'll want to make early in the game is your local library. The wide range of approaches to the subject, as illustrated in the genealogy collection of even a modest institution, will impress you.

Listed in the accompanying sidebar are some of the books I've found useful. One of the best for beginners is *How to Trace Your Family Tree*—it's clear, logical, and concise and contains useful bibliographies and lists of state and federal sources with addresses.

In most general genealogy books, you'll find extensive descriptions of the many public and private institutions that maintain records useful to the genealogist. These books also suggest the records that are more likely to provide the data you seek and tips on how to use them. They contain the all-important technical information that's beyond the scope of this article, and you'll need to keep at least one such reference book on hand throughout your quest.

Numbering the Ancestral Chart

One bit of technical information is directly related to your three computer forms: the numbering system.

As the starting point of the ancestral chart (**Figure 3**), you're given code number 1. Your father and mother are assigned numbers 2 and 3, respectively. Your four grandparents are numbered 4, 5, 6, and 7, the even numbers being assigned to the males and the lowest number in each generation going to your father's side of the family. The numbering system continues in this fashion for each succeeding generation.

The usefulness of the system becomes apparent when you've completed a number of individual and family group sheets, many with the same surname. It's tedious to find the particular one for which you're looking when you have to locate James amid John, Joshua, and Judith. More importantly, the files can be arranged in the order in which they appear on the ancestral chart rather than alphabetically or chronologically, neither of which is appropriate.

Each worksheet is numbered to correspond to this system, with the family group sheet taking its number from the head of the family. This numbering system will help you maintain one very important part of your recordkeeping system—the document file. In this file are marriage certificates, diplomas, military-discharge papers, photographs, photocopies of census records, letters, and all the other archival material that supports the data recorded in your individual and family group sheets.

Give each document the number of the individual or family group to which it pertains. After accumulating even a few dozen items in this file, you'll appreciate the numbering system when it comes time to retrieve that letter from Great-grandmother (number 15) and decipher a clue that suddenly makes sense.

If you want to make up individual and family group sheets for uncles, aunts, and cousins, you can work out an appropriate numbering system for them (2.1, 7.4.1, and so forth), but be forewarned: You'll be well occupied for quite some time with just the major players in your

Figure 4. Individual worksheet form created with AppleWorks word processor.

INDIVIDUAL WORK SHEET		CODE NUMBER: _____
NAME (in full) _____		
BIRTH DATE _____		
BIRTH PLACE _____		
OCCUPATIONS _____		
MILITARY SERVICE _____		
DEATH DATE _____		BURIAL DATE _____
BURIAL PLACE _____		
MARRIAGE DATE _____		
MARRIAGE PLACE _____		
SPOUSE'S NAME _____		CODE NO. _____
FATHER'S NAME _____		CODE NO. _____
MOTHER'S NAME _____		CODE NO. _____
RESIDENCES _____		DATES _____
OTHER BIOGRAPHICAL INFORMATION (education, hobbies, etc.) _____		
SOURCES USED FOR RESEARCH AND VERIFICATION _____		

Figure 5. Family group worksheet form created with AppleWorks word processor.

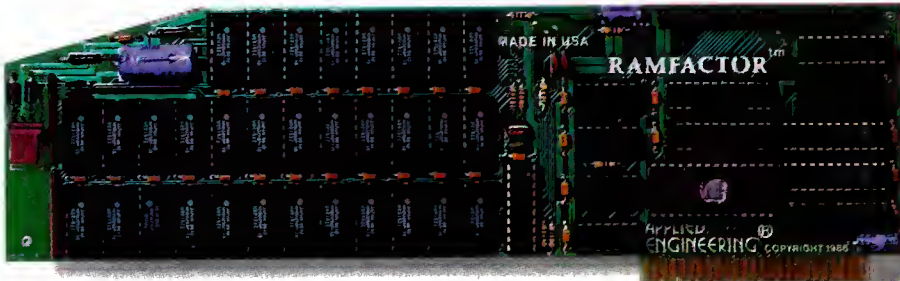
FAMILY GROUP WORK SHEET		FAMILY HEAD CODE NO. _____
HUSBAND (full name) _____		
RESIDENCES PRIOR TO MARRIAGE _____		DATE _____
WIFE (full maiden name) _____		
RESIDENCES PRIOR TO MARRIAGE _____		DATE _____
MARRIAGE DATE _____		PLACE _____
CHILD'S NAME _____	BIRTH DATE _____	PLACE _____
	DEATH DATE _____	PLACE _____
	MARRIAGE _____	
CHILD'S NAME _____	BIRTH DATE _____	PLACE _____
	DEATH DATE _____	PLACE _____
	MARRIAGE _____	
CHILD'S NAME _____	BIRTH DATE _____	PLACE _____
	DEATH DATE _____	PLACE _____
	MARRIAGE _____	
CHILD'S NAME _____	BIRTH DATE _____	PLACE _____
	DEATH DATE _____	PLACE _____
	MARRIAGE _____	
If more than four children use second sheet		
FAMILY RESIDENCES (places and dates) _____		
OTHER DATA _____		
SOURCES USED FOR RESEARCH AND VERIFICATION _____		

RamFactor™

All the Performance, Speed, and Software Compatibility of RamWorks™ in a Slot 1 through 7 Card.

That's right! Now Applied Engineering offers you a choice. While RamWorks is the clear winner for the auxiliary slot in a IIe, RamFactor is the standard for slots 1 through 7. Now anyone with an Apple II+, Franklin, Apple IIe or IIgs preferring to use slots 1 through 7 can now enjoy the speed and performance that until now was only available with RamWorks.

With RamFactor, you'll be able to instantly add another 256K, 512K, or a full 1 meg on the main board and up to 16 meg with additional piggyback card. And since virtually all software is automatically compatible with RamFactor, you'll immediately be able to load programs into RamFactor for instantaneous access to information. You'll also be able to store more data for larger word processing documents, bigger data bases, and expanded spreadsheets.



Very Compatible

All the leading software is already compatible with RamFactor. Programs like AppleWorks, Pinpoint, BPI, Managing Your Money, Dollars and Sense, SuperCalc 3A, PFS, MouseWrite, MouseDesk, MouseCalc, Sensible Speller, Applewriter IIe, Business Works, ReportWorks, Catalyst 3.0 and more. And RamFactor is fully ProDos, DOS 3.3, Pascal 1.3 and CP/M compatible. In fact, no other memory card (RamWorks excepted) is more compatible with commercial software.

AppleWorks Power

There are other slot 1-7 cards that give AppleWorks a larger desktop, but that's the end of their story. But RamFactor is the only slot 1-7 card that increases AppleWorks internal memory limits, increasing the maximum number of records in the database and lines permitted in the word processor, and RamFactor is the only standard slot card that will automatically load AppleWorks into RAM dramatically increasing speed and eliminating the time required to access the program disk, it will even display the time and date on the AppleWorks screen with any ProDos clock. RamFactor will automatically segment large files so they can be saved on 5¼", 3½", and hard disks. All this performance is available to anyone with an Apple IIe, IIgs or II+ with an

80 column card. RamFactor, no other standard slot card comes close to enhancing AppleWorks so much.

True 65C816 16 Bit Power

RamFactor has a built-in 65C816 CPU port for direct connection to our IIe 65C816 card for linearly addressing up to 16 meg for the most powerful 16 bit applications. (II+ 65C816 card under development.)

Powerful Program Switcher

With RamFactor, you can organize memory into multiple work areas and switch between them. Each work area can contain different programs and even different operating systems. Now you can switch from one program to another or even switch from AppleWorks to DOS 3.3 to CP/M to Pascal to ProDos in under a second. And with our Battery back-up option, you can have permanent storage for up to 20 years.

Quality and Support of the Industry Leader

RamFactor is from Applied Engineering, the largest, most well supported manufacturer of Apple peripherals and the inventor of large RAM cards for the Apple. With our 5 year no hassle warranty and outstanding technical support, you're assured of the most trouble free product you can buy.

Features:

- Up to 16 meg total memory, 256K to 1 meg on main board. Up to 16 meg with additional memory on piggyback card
- Fully Apple II Memory Expansion compatible
- Compatible with Apple IIe, II+, IIgs and Franklin
- Battery back-up option allows you to turn on your Apple and run your favorite programs in less than 1 second!
- Automatically recognized by ProDos, DOS 3.3, Pascal and standard CP/M
- Built-in RamDrive™ software (a true RAM disk not disk caching)
- Systems are directly bootable from RamFactor if desired
- Built-in linear addressing 16 bit co-processor port
- Built-in self diagnostic software
- Automatic expansion with AppleWorks 1.3 or later
- Allows Apple II+ and IIe to run your AppleWorks without buying additional software
- Accelerates AppleWorks
- Displays time and date on the AppleWorks screen with any ProDos clock
- Fits any I/O slot except slot 3
- Fully socketed and user upgradeable
- Much, much more

RamFactor with 256K	\$239
RamFactor with 512K	\$289
RamFactor with 1 MEG	\$389
RamFactor with 2-16 MEG	CALL
Battery Back-up Option	\$179
65C816 16 Bit Card	\$159

Order RamFactor today... with 15 day money back guarantee and our "no hassle" five year warranty. See your dealer or call (214) 241-6060, 9 a.m. to 11 p.m., 7 days, or send check or money order to Applied Engineering. MasterCard, Visa and C.O.D. welcome. Texas residents add 5½% sales tax. Add \$10.00 if outside U.S.A.

AE Applied Engineering™
The Apple enhancement experts.

(214) 241-6060

P.O. Box 798, Carrollton, TX 75006

DIGITAL VISION

ALL NEW COMPUTEREYES/2™

VIDEO DIGITIZING SYSTEM FOR APPLE II SERIES COMPUTERS

The world's highest-quality, lowest-priced video digitizer has just gotten even better! The new card-based COMPUTEREYES/2™ for Apple II, II+, IIe and compatibles connects to any standard video source to capture real-world images on your Apple's graphics display. Hundreds of applications!

COMPUTEREYES/2™ features include:

- Fast scanning—single 6 second scan for all capture modes
- Automatic and manual control over both brightness and contrast
- Keyboard-controlled video switching to allow previewing the video source on the Apple monitor.
- New, familiar, Appleworks-style menu
- Standard software supports Apple Hi-Res and Double Hi-Res graphics, plus Gray-Scale boards for really superb images!
- Optional COMPUTEREYES/2™ Enhancement Software package available to convert COMPUTEREYES images to Printshop, Printmaster, Newsroom, and other formats; perform image negate, flip, etc
- Also available as complete system including quality video camera



STILL ONLY \$129.95

Versions available for:

- Apple II, II+, IIe and IIc
- Commodore 64/128
- Atari 800/800XL/130XE
- IBM PC and compatibles (\$249.95—includes additional features)

See your dealer or order direct. Mass. residents add 5% sales tax. Mastercard, Visa accepted. To order, or for more information, write or call:

DIGITAL VISION, INC.

14 Oak Street — Suite 2 • Needham, MA 02192 (617) 444-9040, 449-7160

Circle 184 on Reader Service Card.

DO YOU LOVE PRINT SHOP™?

We do! And that's why we've created the **PS LOVER'S UTILITY SET (P.L.U.S.)**. P.L.U.S. gives you ten "Print Shop™" related utility programs that are so useful, you'll wonder how you ever got along without them.

There's **CATALOG PRINTER** which will print out the picture and name of all the graphics on any library disk. Now you can organize your Print Shop Graphic Library™ disks and make charts of what is stored on each one. With **LABEL PRINTER** you can design and print mailing labels which mix Print Shop™ Graphics and text. It's great for spicing up your letters and you can even use it to design labels for your software disks. **TRANSFER** allows you to convert Print Shop™ graphics so that they can be used with Newsroom™.

If that's not enough, P.L.U.S. features seven more utilities which you'll love. P.L.U.S. requires an ImageWriter™, Apple DMP™, C.Itoh™, or Epson™-compatible printer. It will work with any standard interface card. P.L.U.S. comes complete with printed documentation describing each of the utility programs.



Order product number **PS01** for only **\$24.95**. Price includes shipping and handling! No hidden charges. MasterCard or Visa accepted.

Big Red Apple Club

1105 South 13th Street, Suite 103
Norfolk, NE 68701

(402) 379-4680 Print Shop is a registered trademark of Broderbund Software. Newsroom is a registered trademark of Springboard Software.

Circle 151 on Reader Service Card.

own saga, even with the unflagging support of AppleWorks. My advice: Leave the supporting cast to other family historians for whom they are the stars. Stick to your goals.

On the Other Hand...

In the midst of writing this article, I visited Mount Vernon, George Washington's beautifully preserved estate high on a bluff above the mile-wide Potomac. I walked from the pillared mansion through the flowering dogwood to Washington's burial site on the grounds. The modest, red-brick tomb is surrounded by four white marble obelisks, smaller versions of the monument in the capital. I was only casually observing one of them when the inscription suddenly seized my attention. It was the last resting place of old Bushrod Washington.

The Mount Vernon guidebook indicated that Bushrod had inherited Mount Vernon upon his uncle's death, but had died childless in 1829. Was this the end of my hope to find that the first President's blood flowed in my veins? Perhaps not. Bushrod had two sisters and two brothers—maybe one of the women in that generation or the next married a Craven and named a son Bushrod. I had a feeling I was going to disregard my own admonition and take off on a genealogical tangent. But that's one of the benefits of goals and strategies: You can tell when the right thing to do is ignore them. ■

Weston George is a history buff, Apple enthusiast, and freelance journalist. Write to him at 843 Trenton Drive, Sunnyvale, CA 94087.

Resources

American Genealogical Research Institute, *How to Trace Your Family Tree*, Doubleday, Garden City, NY, 1973.

Beard, Timothy Field, *How to Find Your Family Roots*, McGraw-Hill, New York, 1977.

Groom, Emily Anne, *Unpuzzling Your Past: A Basic Guide to Genealogy*, Betterway Publications, White Hall, VA, 1984.

Doan, Gilbert H., *Searching for Your Ancestors*, Bantam Books, New York, 1978.

Everton, George B., Sr., *Handy Book for Genealogists: Vital Record Sources*, Everton Publishers, Logan, UT, 1971.

Helmbold, F. Wilbur, *Tracing Your Ancestry*, Oxford House, Birmingham, AL, 1976.

Library of Congress, Washington, DC 20540, *Reference Services and Facilities of the Genealogy Room and Guides to Genealogical Research: A Selected List* (free leaflets).

Library of the Genealogical Society of the Church of Jesus Christ of Latterday Saints, 50 East North Temple Street, Salt Lake City, UT 84105: Send for information on books and microfilmed data available.

National Archives and Records Service, Publications Sales Branch, General Services Administration, Washington, DC 20408, *Genealogical Records in the National Archives* (free leaflet).

PaperClip™

"The #1 Best Selling Word Processing Package" – BILLBOARD'S COMPUTER SOFTWARE CHART*

PAPERCLIP II

FOR THE COMMODORE 128

- Compatible with C-64 PaperClip files: the natural choice for C-128 upgrades
- Includes integrated 38,000-word spelling checker
- Built-in telecommunications module: access on-line services, incorporate on-line data in your work, and send text to other users
- New editing features include multiple columns, reverse video scroll, chaptering, powerful macros
- Maximum document size expanded to 999 lines

PAPERCLIP FOR THE APPLE IIe, c

- Insert/Delete, Move & Copy, Cut & Paste, Global Search & Replace
- Automatic page numbering, headers and footers
- Simplified columns, tabbing and scrolling
- Form letter and mailing label functions
- Unique new capabilities for Apple: dual text windows, automatic text protection, macro commands and more

PAPERCLIP

FOR ATARI HOME COMPUTERS

(WITH SPELLPACK FOR THE 130 XE)

- All the high-productivity editing features plus: Dual Text Windows, Automatic Paging, Macros and much more
- Fully-integrated SpellPack spelling checker on the same disk
- 36000 words in the SpellPack dictionary plus you can add thousands more
- Memory-resident for speed and convenience: no need to quit the word processor to check a document

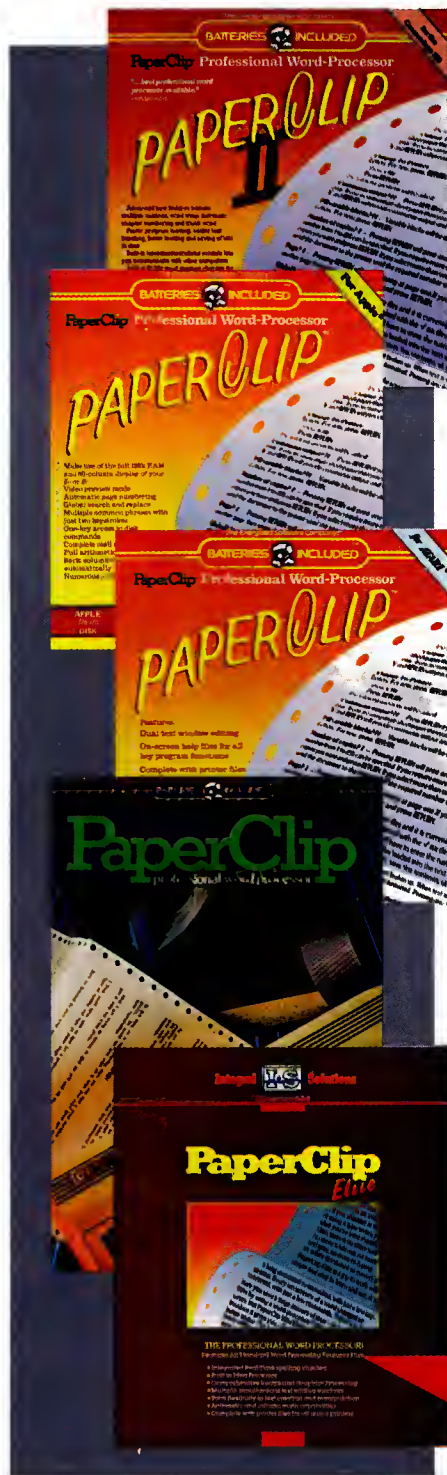
PAPERCLIP with SPELLPAK

FOR THE COMMODORE 64

- Built-in spelling checker
- All the high-productivity text editing features
- Move, Copy, Insert, Delete – words, sentences or entire blocks of text
- Macro power: define & store up to 52 repetitive words/phrases, then enter them with just one keystroke
- Includes 80-column Print Preview display, requires no extra hardware
- Sophisticated Global Search & Replace, Mail Merge and Mailing Label functions

PAPERCLIP ELITE FOR THE ATARI ST and COMMODORE AMIGA

- Go beyond word-processing, with idea processing, text/graphics integration, real-time spell checking, independent variable columns and so much more. Look for PaperClip Elite. Coming soon.



"you can't go wrong choosing Paper Clip"

– THE GUIDE TO COMPUTER LIVING

"the Cadillac of word processors."

– OMNI MAGAZINE

"best professional word processor available"

– RUN MAGAZINE

"by far the best word processor ever available"

... So clearly superior, ... State-of-the-art

word processing"

– ANTIC

"as far as we are concerned, PaperClip is the top word processor running on a micro computer."

– HOME APPLICATIONS FOR THE C-64

"Performance: excellent. Error-handling: excellent. Value: excellent. ... You'll find yourself growing spoiled."

– FAMILY COMPUTING

"Exceptional word processing. ..."

– INPUT

"many features ... easy to use"

– ATARI EXPLORER

"A superb word processor ... the most sophisticated to date."

– COMPUTE MAGAZINE

"... the ultimate word processor"

– ANALOG MAGAZINE

"One of the easiest of the professional word processors ... a sensible manual ... plenty of aids for the accident prone."

– COMPUTING NOW

"An excellent word processor ... well designed ... many advanced features."

– INFOWORLD

"a 'must have' in an ideal software library"

– ELECTRONIC LEARNING

"... most powerful of packages"

– COMMODORE MAGAZINE

"PaperClip is a logical evolutionary step forward."

– AHOY

"... facts attest to its excellence!"

– FAMILY COMPUTING

**COMING
SOON!**



BATTERIES INCLUDED, an IBM company, 30 Mural Street, Richmond Hill, Ontario, Canada, L4B 1B5 (416)881-9941, Customer Information (416)881-9616. If you can't find this product at your local retailer, you may order it direct from us at the full suggested list price plus \$5.00 for postage and handling. For product orders please call 1-800-387-5707 (U.S. only). For most Batteries Included products you can always have the latest version of your program by returning the original disk and \$10.00. Write to us for our full color catalog of products for the APPLE, APPLE MACINTOSH, ATARI, ATARI ST, COMMODORE, COMMODORE AMIGA, AND IBM SYSTEMS.

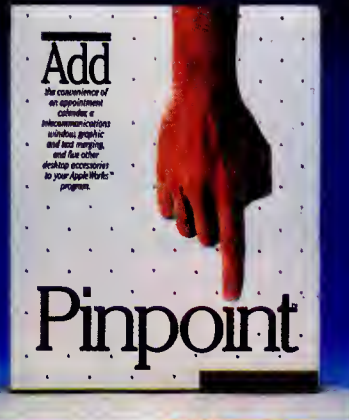
©1986 Batteries Included. APPLE, APPLE MACINTOSH, ATARI, ATARI ST, COMMODORE, COMMODORE AMIGA, AND IBM are registered trademarks respectively of APPLE COMPUTERS INC., ATARI CORPORATION, COMMODORE BUSINESS MACHINES INC., AND INTERNATIONAL BUSINESS MACHINES INC. Some features may vary with computer system used.

*AS COMPILED FROM NATIONAL RETAIL SALES REPORTS



AppleWorks™

1



InfoMerge

Peter Meyer

Works with AppleWorks™

PointOfView

Gary B. Little

Works with AppleWorks

Pinpoint

Pinpoint

Pinpoint

Works with AppleWorks

ToolKit

Works with AppleWorks

Document

Works with AppleWorks

KeyPlayer

Works with AppleWorks

Graphic

Works with AppleWorks

Power Tools

Power Tools

Over 500,000 people take a shortcut to work.

APPLEWORKS SURE

There are reasons why AppleWorks is the number one software program for all Apple II's, including the new Apple IIGS.

And why AppleWorks is likely to remain #1 for years to come.

Quite simply, it has the power to get your most-needed work done.

And when it comes to adding value to this world-wide best seller, look to Pinpoint Publishing.

You'll quickly discover the power and convenience of an integrated line of software programs designed specifically to extend the capabilities and add flexibility to the way you work.

Take a close look and compare the complete AppleWorks/Pinpoint solution to any other. Only then will you appreciate the security and performance of Apple Computer's own software family.

Picture this on your Apple IIc, IIe or new Apple IIGS.

By Steve Cochard

CHART THE FUTURE

This Christmas, you could be producing stunning presentation graphics, charts and graphs, full-color slides and classroom view foils.

Introducing GRAPHIC EDGE. The charting and graphing program with the hot-link connection to AppleWorks' own spreadsheet data.

The color slide program with two million pixel resolution and nearly one million colors.

The color presentation program that works with Printshop and a dozen other new Apple II Series graphics programs all with cut-and-paste simplicity.

Starting at only \$129.00 for your complete workstation software, GRAPHIC EDGE quickly grows into a complete production system ideal for school districts, small business and professional organizations.

Watch for GRAPHIC EDGE's exciting November introduction.

Pinpoint

These accessories make AppleWorks twice as efficient.

EIGHT GREAT REASONS

Add PINPOINT Desktop Accessories' complete selection of pop-up power tools to enhance your AppleWorks, or other selected ProDOS™ programs.

Just one keystroke away, this package contains the most-used AppleWorks productivity tools with great potential for growth built in! (See PINPOINT TOOLKIT, RUN-RUN, and KEY PLAYER™ below.)

Here's what's inside every PINPOINT Desktop Accessory box:

- Appointment Calendar
- Automatic Telephone Dialer
- Baby Word Processor / Pop-up Notepad
- Envelope Addresser/Labeler
- Four-Function Calculator
- Graphics and AppleWorks Document Merge Printing
- Memory-Writer Style Typewriter
- Telecommunications Window

Each so well integrated with AppleWorks, you'll think of them as part of AppleWorks itself. And in a way, they are.

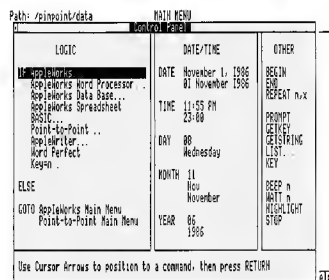
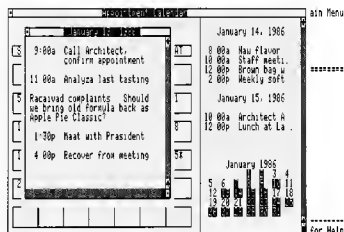
Yet, the amazing thing is, each desktop accessory is also a powerful ProDOS application.

\$149

PP/SP3

PINPOINT and SPELLING CHECKER

Now, you can order both PINPOINT Desktop Accessories and the SPELLING CHECKER for one money-saving price. As a special bonus, we'll include our very helpful RAM ENHANCEMENT KIT, FREE!



KEYPLAYER

Apple II Forever.
Apple IIc, Enhanced IIe
and hot new Apple IIGS.

ToolKit

\$89.00

PINPOINT Desktop Accessories

PP

\$49.00

PINPOINT TOOLKIT

TK

Programmer's resource and toolbox for writing Desktop Accessories all your own. Includes a Programmer's Calculator, pop-up ProDOS Filer, RunRun multi-tasking desktop and high-capacity disk drive manager, Memory Window, Resource Converter, Video Resource Editor, and the Accessory Mover. Requires Pinpoint Desktop Accessories.

\$69.00

SPELLING CHECKER

SP

Requires AppleWorks and Pinpoint

\$69.00

DOCUMENT CHECKER

DC

Requires AppleWorks

\$99

SPELLING CHECKER and DOCUMENT CHECKER

SPDC

Both spelling checkers in one convenient, money-saving package.

\$29.00

RAM ENHANCEMENT KIT

RK

Pinpoint recommended

\$29.00

PINPOINT APPLE IIe UPGRADE

AK

Pinpoint and Spelling Checker require an Apple IIGS, Apple IIc, Enhanced Apple IIe with 128K or Apple IIe with Pinpoint's Apple IIe Upgrade Kit and 128K; two Apple 5.25 drives, or one Apple 3.5 drive, hard disk or extended RAM card. Communications Window and Telephone Dialer require a modem. Most popular dot matrix printers and interface cards supported. Not copy protected. Contact Pinpoint Direct for a list of compatible hardware and software, or a FREE CATALOG.

KeyPlayer

Macro Keys for AppleWorks.

INSTANTLY BANISH BORING, REPETITIVE WORK FROM YOUR DESKTOP.

Watch KEY PLAYER turn one keystroke into complete turn-key AppleWorks solutions. Design new courseware and training applications, insert boiler plate text, or design interactive demonstrations.

KEY PLAYER can also add new capabilities to AppleWorks, and in time, other selected ProDOS applications. Commands like block delete with 'undo', delete word, and automatic save then print. Things that make every minute you spend with AppleWorks incredibly more productive.

You'll marvel at KEY PLAYER's amazing skill in adding pop-up menus, powerful 16-level nested macros, IF—THEN—ELSE conditional branching, automatic keyboard recording directly to an AppleWorks file for quick review and easy editing.

You can even assign one macro key to perform the same function inside different applications. So now, every application can have the same 'Save then Print' or 'Delete Word' command!

Good news, you can have all the power and convenience of KEY PLAYER's amazing macro keys on your PINPOINT Desktop.

Frankly, KEY PLAYER is the single most important and exciting AppleWorks productivity product for 1986.

\$49

KP

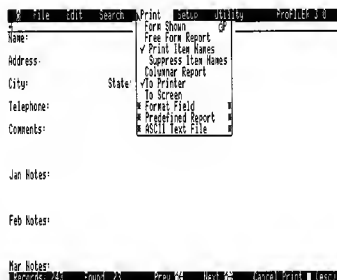
KEY PLAYER

Macro keys and scripting program for AppleWorks. Requires Pinpoint Desktop Accessories.

Requires Apple IIGS, Apple IIc, Enhanced Apple IIe with 128K or Apple IIe with Pinpoint's Apple IIe Upgrade Kit and 128K; two Apple 5.25 drives, or an Apple 3.5 drive, hard disk or extended RAM card. Not copy protected. Contact Pinpoint Direct for a list of compatible hardware and software or a FREE CATALOG.

Power Tools

Add capacity and flexibility to your AppleWorks and PFS:File database files.



PROFILER

WORLD RECORD HOLDER

PROFILER 3.0 combines the most useful database and report-writing features, with the wonder of the Apple mouse. Powerful 65,000 record, 250 field (including text comment fields) capacity, and a free-form report writer means there are very few jobs PROFILER 3.0 can't tackle.

Plus, there's no need to reenter your most valuable AppleWorks and PFS:File databases to take advantage of PROFILER's impressive information management features.

Then add PINPOINT, PINPOINT TOOLKIT, RUN-RUN and KEY PLAYER compatibility to PROFILER's long, long list of powerful features. This is the database manager to turn to when your AppleWorks runs out of gas.

\$129 PF/PFL0

PROFILER 3.0

Order today and we'll rush to you our \$29.95 PROFILER LABEL UTILITY, FREE.

\$129.00 PF

PROFILER 3.0

\$79.00 PF22

PROFILER 2.2

Similar database management and report writing capabilities in an earlier, cursor-based version.

\$29.95 PFL

PROFILER LABEL UTILITY

Requires Apple IIGS, Apple IIc, Enhanced Apple IIe with 128K or Apple IIe with Pinpoint's Apple IIe Upgrade Kit and 128K; one Apple 5.25 drive, an Apple 3.5 drive, hard disk or extended RAM card. Not copy protected. Contact Pinpoint Direct for a list of compatible hardware and software or a FREE CATALOG.

Point-to-Point

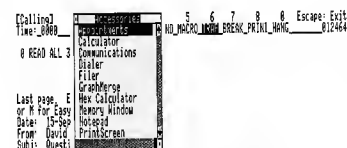
By Gary B. Little

Noted author, columnist and expert Apple II programmer.

Only Point-to-Point sends and receives multiple files automatically, error-free.

NO CONVERSIONS OR RENAMING REQUIRED

This year's big communications news is Point-to-Point's exclusive Extended Xmodem Protocol (EXP) that automatically sends/receives batches of ready-to-run files, file names, hidden bits and all — error free. There's never been an easier way to share information, program updates, or entire computer solutions with people anywhere in the world.



I called your tech support number just today with some questions I had about my new Pinpoint, when I got last Saturday. I have two wires. I can't seem to find in the documentation how to change modem default settings and I've been told by people in PAUG that I should have version 1.22. I have version 1.2. What am I missing and what is involved in getting an upgrade?

Last page. Enter command or (C) to continue. I

COMMUNICATIONS POWER

Point-to-Point's got all the most-used features you'll use everyday. Powerful auto log-on macros go well beyond ordinary dial-the-phone, NAME and PASSWORD stuff. Including conditional branching, Quick-Key macros and real time clock support.

Yet everything is AppleWorks easy; right down to the familiar AppleWorks file card design, Open-Apple commands and immediately useful AppleWorks data files.

Add to that, simultaneous formatted printing, disk file capture and display while online, plus full 300/1200/2400 baud modem support or direct-connect file transfers at up to 9600 baud.

SAY IT YOUR WAY

Point-to-Point's the only communications program that lets

you extend the value of your information using PINPOINT Desktop Accessories, PINPOINT TOOLKIT, KEY PLAYER and GRAPHIC EDGE (see descriptions below)!

Point-to-Point includes free or money-saving offers including CompuServe's Executive Service, Delphi, The Source, NewsNet, OAG, and GENie.

\$129 PT/RR0

POINT-TO-POINT

Order today and we'll rush to you our \$49.00 RUN-RUN ProDOS desktop manager, FREE.

\$50 Rebate PT2

POINT-TO-POINT

At your option, instead of the free RUN-RUN offer above, receive a \$50 Trade-In Credit for your old telecommunications software master disk, whose retail price was \$50 or greater. Just send it, with your order for Point-to-Point, directly to "Trade-In Offer" c/o Pinpoint Direct, Box 13323, Oakland, CA 94661-0323. No returns, exchange only. Contact Pinpoint Direct at (415) 654-3050 for complete details.

Requires Apple IIGS, Apple IIc, Apple IIe, (Enhanced Apple IIe with 128K or Apple IIe with Pinpoint's Apple IIe Upgrade Kit and 128K required for Pinpoint Desktop Accessories' compatibility); one Apple 3.5 or 5.25 drive, hard disk or extended RAM card. Most modems and interface cards fully supported. Not copy protected. Contact Pinpoint for a compatible hardware list or a FREE CATALOG.

\$49 RR

RUN-RUN

The ProDOS desktop manager and disk organizer that runs multiple accessories at once. A must-have program for your Apple 3.5 drive, extended RAM card or hard disk. Ideal integrated environment for use with PINPOINT Desktop Accessories as stand-alone applications.

\$49.95 QTT

TEACHERS' TOOLS

Student grading system with varying curves and standards, research and assignment files. An AppleWorks template program.

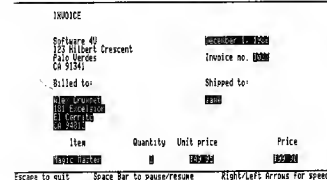
LEARN PINPOINT PROGRAMS FAST

All Pinpoint programs include on-screen help, sample data files, step-by-step tutorials and the best user guides in the industry so you can learn at your own pace.

InfoMerge

By Peter Meyer

Pinpoint Publishing *** InfoMerge ***



Tirelessly, this mail merge and database reporting program prints things AppleWorks never will.

DIRECT MERGE PRINTING

Only INFOMERGE offers you on-screen, direct merge-printing, with direct AppleWorks database manipulation. Perfect for invoices, sales letters, report cards, standard agreements or for personalizing your holiday "Thank You" letters.

And you can do all this without bothersome record limitations or cumbersome clipboard "print files" imposed by AppleWorks and other add-on programs.

So stop retyping everything by hand, and let INFOMERGE deliver what-you-see-is-what-you-get printed perfection, every time.

NUMBERS ADD UP

Plus, only INFOMERGE includes powerful calculated fields with easy <QUANTITY> * <PRICE> = <TOTAL> formulas that can use AppleWorks' own category names. It's columnar printing is so savvy the decimal points even line up!

This way, sending invoices, statements and report cards is not only possible, but are suddenly simple to do.

Much, much more than a mailing program, here are all the most-asked-for features that AppleWorks simply forgot.

\$79 NF/QIB0

INFOMERGE

Order today and we'll rush to you Q-Mar's INSTANT BUSINESS LETTERS program, worth \$49.95, FREE.

Spelling Checker

File: Report
 REVISED CHANCE
 Early next year, we will break ground on the new addition to our headquarters complex.
 The architect for the project, Ludwig Mies van der Rohe, designed several prestigious projects around the Chicago Export Company headquarters in Osaka is a example. Even his most insignificant designs have awarded like the Housing Museum in his home town of Stuttgart, Germany.
 It's quite a coup for the Apple IIe (company to well-known and well-respected architect for our building. He was working on the corner of time in AppleWorks has charted a new course in architecture. Many of his designs center around a major theme: the use of his client's focus. For example, the Museum is in the shape of a great white whale to resemble the shape of the museum. The great white whale is a type entry or use 0 commands Line 13 Column 22 0-7 for help

Finally, a choice in full-featured spell checkers.

POP-UP CONVENIENCE

Only Pinpoint Publishing offers you the choice. Our pop-up SPELLING CHECKER checks your documents without leaving AppleWorks behind. Check a word or a paragraph at a time, or check everything when you're done against our amazingly accurate 61,000-word dictionary.

SPELLING CHECKER displays up to 10 alternate spellings next to suspected misspelled words, then corrects and reformats using AppleWorks' own powerful editing commands. Or, at your option, you may add words to your own unlimited capacity personal dictionary for technical terms, abbreviations, names and places.

There're even special features like word counting, spell-checking summaries, and the ability to highlight misspelled words without displaying alternative spellings for vocabulary and word-skill lessons.

Checker Document

FASTEST BATCH SPELLING CHECKER

For long documents, reports or contracts, the stand-alone DOCUMENT CHECKER uses the full power of your Apple II to check up to 16 documents in sequence.

The fastest AppleWorks spelling checker available, it checks your work at 30 to 150 words per second, thanks to Pinpoint Publishing's exclusive word cache design that actually increases in

speed the more documents you check!

DOCUMENT CHECKER features the same amazing 61,000 word dictionary and convenient check, suggest and correct features as our SPELLING CHECKER.

And because they both feature (and can share interchangeably) an unlimited capacity personal dictionary, every special word you add with one can be used by the other so there's no wasted effort.

No wonder most people take advantage of the high performance and special low price on this unbeatable spell checking team.

\$99 SPDC

SPELLING CHECKER and DOCUMENT CHECKER Both spelling checkers in one convenient, money-saving package.

\$69 SP

SPELLING CHECKER Requires Pinpoint and AppleWorks

\$69 DC

DOCUMENT CHECKER Requires AppleWorks

Requires Apple IIGS, Apple IIc, Apple IIe, (Enhanced Apple IIe with 128K or Apple IIe with Pinpoint's Apple IIe Upgrade Kit and 128K required for Pinpoint and Spelling Checker compatibility); two Apple 5.25 drives, one Apple 3.5 drive, hard disk or extended RAM card. Not copy protected. Contact Pinpoint Direct for a FREE CATALOG.

\$399 2400-G

PROMODEM 2400G, New external 300/1200/2400 baud modem for Apple II, Macintosh or IBM PC. Cables not included.

\$199 PR-1200A

PROMODEM-A2, New single-slot internal 300/1200 baud modem for the Apple IIe/IIGS.

\$199 PR-1200G

PROMODEM 1200G, New external 300/1200 baud modem for Apple II, Macintosh or IBM PC. Cables not included.

Apple II Forever.
 Apple IIc, Enhanced IIe
 and hot new Apple IIGS.

FREE OFFERS

FREE OFFERS are available for retail purchases, or orders placed directly with Pinpoint Publishing, between October 1st and December 31st, 1986.

To qualify, purchase the products listed in the offer, then send completed product registration cards, plus proof of purchase, to Pinpoint Publishing, Box 13323, Oakland, CA 94661-0323. Pinpoint Publishing will rush to you, by return mail, your special bonus products, FREE! Call Pinpoint Direct at (415) 654-3050 for complete details.

30 DAY MONEY BACK GUARANTEE

We're so certain you'll be completely satisfied with our software, we offer a no hassles 30-DAY MONEY BACK GUARANTEE for everything you purchase from Pinpoint Direct. Return orders subject to a 15% restocking charge.

© 1986 Pinpoint Direct. Pinpoint is a trademark of Pinpoint Publishing. ProFILER is a trademark of Custom Computer Products and is licensed exclusively to Pinpoint Publishing. Apple is a registered trademark, while AppleWorks, Macintosh, ProDOS and UniDisk are trademarks of Apple Computer, Inc. Offers expire 12/31/86 and are void where prohibited or taxed.



Power Tools

ORDER FORM

Order 24 Hours TOLL FREE
 800/633-2252 Ext. 636

YES, Please rush to me the products I've checked below.

PP	\$ 89.00	Pinpoint Desktop Accessories	<input type="checkbox"/>
PP3/SP3	149.00	Pinpoint & Spelling Checker	<input type="checkbox"/>
		FREE \$29.00 RAM Kit	
TK	49.00	Pinpoint Toolkit	<input type="checkbox"/>
SPDC	99.00	Spelling & Document Checker	<input type="checkbox"/>
SP	69.00	Pop-up Spelling Checker	<input type="checkbox"/>
DC	69.00	Document Checker	<input type="checkbox"/>
PT/RR0	129.00	Point to Point	<input type="checkbox"/>
		FREE \$49.00 RunRun	
PT2	79.00	Point-to-Point, Rebate Offer	<input type="checkbox"/>
NF/QIB0	79.00	InfoMerge Mail Merge	<input type="checkbox"/>
		FREE \$49.95 Business Letters	
QIB	49.95	Instant Business Letters	<input type="checkbox"/>
QTT	49.95	Teachers Tools Templates	<input type="checkbox"/>
PF/PFL0	129.00	ProFILER 3.0 Database	<input type="checkbox"/>
		FREE \$29.95 Label Utility	
PF22	79.95	ProFILER 2.2 Database	<input type="checkbox"/>
PFL	29.95	ProFILER Label Utility	<input type="checkbox"/>
PFC/PRO	12.00	ProFILER Data Conv.	<input type="checkbox"/>
PPC/DOS	12.00	ProFILER Data Conv.	<input type="checkbox"/>
KP	49.00	KeyPlayer Macro Keys	<input type="checkbox"/>
RK	29.00	RAM Enhancement Kit	<input type="checkbox"/>
AK	29.00	Pinpoint Apple IIe Upgrade	<input type="checkbox"/>
RR	49.00	RunRun ProDOS Desktop	<input type="checkbox"/>
PR/1200A	199.00	ProModem 1200A Internal	<input type="checkbox"/>
PR/1200G	199.00	ProModem 1200G External	<input type="checkbox"/>
PR/2400G	399.00	ProModem 2400G External	<input type="checkbox"/>

Merchandise Total _____
 Local Sales Tax _____
 Shipping & Handling _____
 ORDER TOTAL _____

Add \$3.00 Shipping and Handling. For UPS Blue, add \$5.00. International Air Mail, \$15.00. In California add 6.5% sales tax. 30 Day No-Hassle Money Back Guarantee. Returns subject to a 15% restocking fee.

MAIL TO:

Pinpoint Direct • Box 13323 • Oakland, CA 94661

ORDERED BY:

Name _____
 Company/School _____
 Address _____
 City/State _____
 ZIP CODE _____
 Telephone _____ Day _____
 Evening _____

Pinpoint Product(s) Owned _____
 Registration Numbers _____

PAYMENT INFORMATION:

School PO# _____
 AMEX Visa MasterCard Check Enclosed
 Account Number _____
 Expiration Date _____
 Your Signature _____

Thank you for your order.

 Pinpoint

Power Tools
 24 Hour Toll Free Order Phone
 800-633-2252/Ext. 636

APPLEWORKS IN ACTION

Publishing a Company Newsletter

"Publishing a newsletter is one of the best ways to communicate."



by Ruth K. Witkin

Good communication with employees is the glue that holds a company together. One of the best ways to communicate is through a company newsletter. Properly done, a newsletter creates good will, gets the word out on important matters, and involves employees in the workings of a company. It doesn't have to be fancy, and it shouldn't be frivolous—just accurate, informative reporting of the company's past achievements, current happenings, and future plans.

Newsletters typically contain messages from management, articles on social and athletic activities, safety and health programs, benefits, policies and procedures, employee promotions, service anniversaries, birthdays, and anything else that tells employees, "You're important."

If you publish a newsletter and are often in a bind for material, look into a subscription service that provides articles, artwork, headings, and fillers that can make your newsletter livelier. Berry Publishing (300 North State Street, Chicago, IL 60610) is a good one. Ask for a free copy of *Pages*, its monthly brochure.

Imagine that you're the personnel director of the Vollner Tool & Die Company. You're working on the front page of *The Vollner Voice*. In this session, you create everything shown in **Figure 1**—newsletter name, credits, dashed lines, and a special-occasion report—on the AppleWorks word processor.

When you see such key combinations as OA-Z, hold down the open apple key and type Z. During the creation process, I'll ask you to save the document. If you have a one-drive system, watch the screen for prompts that tell you when to swap the Program disk for the data disk.

Use the AppleWorks Startup and Program disks to bring up a new word-processor screen. Name this file *NEWSLETTER*. You should now see the Review/Add/Change screen.

Entering the Text

Figure 2 contains the text, line numbers, and rectangular characters dubbed *blots*. The blots show where you press the return key to end a paragraph or insert a blank line.

Press OA-Z to keep the blots on screen as you work.

The next step is to enter the text. Before you start, though, read the following instructions: To be sure your results agree with the finished product, press the space bar only *once* between sentences. If you make a typo, press the delete key to back up the cursor. You'll find many "employee" names in this piece. It won't hurt anything and it can be fun to substitute the names of people *you* know. Don't go overboard, though; just substitute one-for-one.

Your cursor should be in line 1 column 1. Now enter the text shown in **Figure 2** according to the instructions shown in the **Table**.

Correcting the Text

Now compare your text with **Figure 2**. If something is missing, place the insert cursor (the blinking underline) on the character to the right of the insertion. If you discover a typo, place the overtype cursor atop the character you want to replace. Pressing OA-E switches from one cursor to the other. If you need to delete anything, just place either cursor to the right of the doomed character and press the delete key.

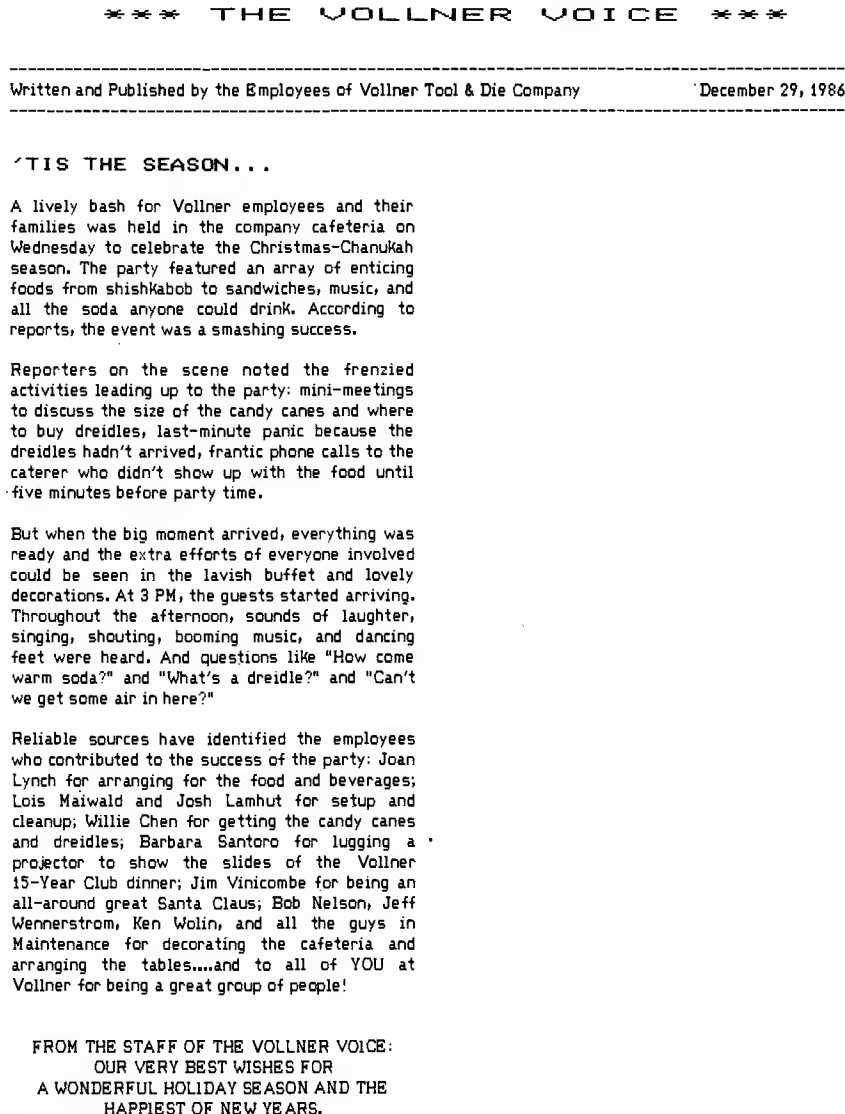
The following keys get you from one place to another: The left and right arrow keys move the cursor one character at a time in the direction of the arrow. OA-left arrow and OA-right arrow hop the cursor from word to word. The down and up arrow keys move the cursor one line at a time. Keys OA-1 through OA-9 jump the cursor vertically in proportional increments.

When the text is complete, press OA-S to store it on disk.

Printing the Unformatted Document

Seeing how something looks before formatting can give you an idea of the tasks that lie ahead. Turn on your printer. Press OA-P to start the print command. Press the return key to confirm *Beginning*. Now press the return key to select the printer (or type a printer number, then Return). Press the return key again to confirm one copy. When the printer stops, there's your document. Your words are brilliant, of course. But the way it looks—yuch!

Figure 1. The front page of The Vollner Voice, a company newsletter produced with the AppleWorks word processor.



Formatting the Document

Getting the results you want is often a matter of doing the obvious first, then testing to see what works better. I wanted this newsletter to have two columns of equal width, page variety, and a professional, typeset look. After some initial planning and a few false starts—mainly the width of the columns—I finally reached the point where I could say, "That's it." Here's how to do it.

Setting the Margins

First, set the margins. Press OA-1 to jump the cursor to line 1 column 1. Press OA-O to bring up the Printer Options screen. Type **TM** and press

the return key. Type **.6** and press the return key again. Now type **BM** and press the return key. Type **1** and press the return key again. Next, type **LM** and press Return. Type **.5** and press Return. And finally, type **RM** and press Return. Type **.5** and press the return key again.

Character Size and Centering

The next step prints THE VOLLNER VOICE at four characters per inch. Type **CI** and press the return key. Type **4** and press the return key again. Now center the newsletter name: Type **CN** and press Return. Press the escape key to exit the Printer Options screen.

Uncentering and Proportional Spacing

Next, have AppleWorks end the centering. Place the cursor on line 8 column 1. Press OA-O, type **UJ**, and press the return key. The rest of the text is proportionally spaced, which gives each character—skinny *i* or chubby *w*—only the room it needs, unlike standard spacing, which gives every character the same amount of room. AppleWorks has two kinds of proportional spacing—P1 and P2. P1 characters are slightly narrower. Type **P1** and press Return. Press the escape key.

Increasing the Article Heading

Next, tell AppleWorks to print TIS THE SEASON at eight characters per inch. Place the cursor on line 20 column 1. Press OA-O, type **CI**, and press the return key. Type **8** and press the return key again. Press the escape key.

Proportional Spacing and Justifying Text

Now return the text to proportional spacing. Place the cursor on line 23 column 1 and press OA-O. Type **P1** and press Return. Next, have AppleWorks justify the lines to produce an even right edge: Type **JU** and press the return key again.

Increasing the Right Margin

Next, increase the right margin to allow room for a right column. You are still in the Printer Options screen. Type **RM** and press Return. Type **4.2** and press Return again. Press the escape key.

Centering the Good Wishes

To give this page a bit more variety, center the last four lines. Press OA-9 to jump the cursor to line 75. Move the cursor to line 71 column 1 and press OA-O. Type **CN** and press Return. Press the escape key.

Boldfacing

The final step tells AppleWorks to print the newsletter name, credits, and TIS THE SEASON in boldface type, which makes them really stand out. Press OA-3 to jump the cursor to line 19. Now place the cursor on line 21 column 1. Press the control key and type **B**. The caret that appears indicates the start of boldface.

AppleWorks uses the same caret for different printer options. To see what a caret stands for, just place the cursor on the caret. Try it now: Press the left arrow key and there's the description

Figure 2. The text for a column in The Vollner Voice.

```

*** THE VOLLNER VOICE ***
*
*
-----
Written and Published by the Employees of Vollner Tool & Die
Company                               December 29, 1986
-----
*
*
'TIS THE SEASON...
*
A lively bash for Vollner employees and their families was
held in the company cafeteria on Wednesday to celebrate the
Christmas-Chanukah season. The party featured an array of
enticing foods from shishkabob to sandwiches, music, and all
the soda anyone could drink. According to reports, the event
was a smashing success.
*
Reporters on the scene noted the frenzied activities leading
up to the party: mini-meetings to discuss the size of the
candy canes and where to buy dreidles, last-minute panic
because the dreidles hadn't arrived, frantic phone calls to
the caterer who didn't show up with the food until five
minutes before party time.
*
But when the big moment arrived, everything was ready and
the extra efforts of everyone involved could be seen in the
lavish buffet and lovely decorations. At 3 PM, the guests
started arriving. Throughout the afternoon, sounds of
laughter, singing, shouting, booming music, and dancing feet
were heard. And questions like "How come warm soda?" and
"What's a dreidle?" and "Can't we get some air in here?"
*
Reliable sources have identified the employees who
contributed to the success of the party: Joan Lynch for
arranging for the food and beverages; Lois Maiwald and Josh
Lamhut for setup and cleanup; Willie Chen for getting the
candy canes and dreidles; Barbara Santoro for lugging a
projector to show the slides of the Vollner 15-Year Club
dinner; Jim Vinicombe for being an all-around great Santa
Claus; Bob Nelson, Jeff Wennerstrom, Ken Wolin, and all the
guys in Maintenance for decorating the cafeteria and
arranging the tables....and to all of YOU at Vollner for
being a great group of people!
*
*
FROM THE STAFF OF THE VOLLNER VOICE:
OUR VERY BEST WISHES FOR
A WONDERFUL HOLIDAY SEASON AND THE HAPPIEST OF NEW YEARS.

```

Table. Instructions for entering the text in Figure 2.

Line	Action
1	Type *** THE VOLLNER VOICE *** and press the return key three times to end the paragraph and insert two blank lines. The cursor moves to line 4.
4	Hold down the minus-sign key until the cursor is on line 5 column 32. The minus sign will wrap around. Release the minus-sign key and press the return key. The cursor moves to line 6.
6	Type Written and Published by the Employees of Vollner Tool & Die Company. Hold down the space bar until the cursor is on line 7 column 30. Type December 29, 1986 and press the return key. The cursor moves to line 8.
8	Hold down the minus-sign key until the cursor is on line 9 column 32. Release the key and press Return three times to end the paragraph and insert two blank lines. The cursor moves to line 12.
12	Type 'TIS THE SEASON. . . and press the return key twice to end the paragraph and insert a blank line. The cursor moves to line 14.

Table continued on next page.

Not Piracy...



Read **COMPUTIST**

& get step-by-step instructions on how to move your uncopyable software to normal disks so you can:

- Make backups far your expensive software more easily.
- Move programs from floppy to hard disk.
- Add custom modifications such as fast DOS to speed up LOADs and SAVEs.

You also get: *Adventure Tips, Advanced Plying Techniques (APT's), bit copier parameters, hardware modification and construction projects, and more.*

Just **Good Sense!**

If you're a vigorous Apple computist you can't afford to be without us any longer!

Subscription Rates (12 Issues)

U.S. \$32
U.S. First Class \$45
Canada & Mexico \$45
Other Foreign \$75

Sample copy

U.S. \$4.75 ea.
Foreign \$8.00 ea.

Book Of Softkeys Volume I (12 Issues)


157 pages: a compilation of COMPUTIST #1-#5

U.S. \$15 ea. All Foreign \$18 ea.

Book Of Softkeys Volume II

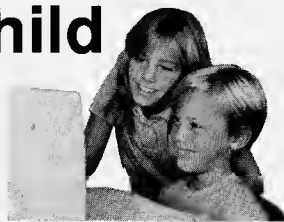
157 pages: a compilation of COMPUTIST #6-#10

U.S. \$20 ea. All Foreign \$23 ea. (WA state orders add 7.8% tax.)

<input type="checkbox"/> New Subscriber	<input type="checkbox"/> Renewal	<input type="checkbox"/> Sample
<input type="checkbox"/> Book Of Softkeys Volume I	<input type="checkbox"/> Book of Softkeys Volume II	
Name _____	ID# _____	
Address _____		
City _____	State _____ Zip _____	
Country _____	Phone _____	Exp. _____
	Signature _____	IN _____

Send orders to:
COMPUTIST PO Box 110846-I Tacoma, WA 98411
U.S. funds drawn on U.S. bank.

Teach Your Child to Type.... Fast!



Peek Pruf™

...a revolutionary new way to learn to type!

Peek Pruf™ cures the "hunt & peck" habit with a custom engineered module that prevents "peeking" at the keys.....while it shows you exactly where your fingers go next!

The Peek Pruf™ System:

- Makes any student an instant "touch typist".
- Works with Mastertype™, Typing Tutor™.
- Custom designed for your keyboard.
- Ideal for classroom use.
- Improves grades.

Special Introductory
offer:

Only 14.95

(30 Day Money-Back Guarantee)
Volume Discounts to Schools

VISA, MASTERCARD orders
Call 1-800-334-3034
(Calif. 1-800-334-3030)

Or Send check or MO to:

Livesoft, 9747 Business Park Ave. San Diego CA 92131

Trademarks- Mastertype: Scarborough Systems. Typing Tutor: Kriya

Peek Pruf™
is available for : Apple™ II • Commodore™
IBM™ • Macintosh™ and other computers
Specify make & model when ordering

Circle 177 on Reader Service Card.

APPLEWORKS IN ACTION

at the bottom of the screen—*Boldface Begin*. There's no need to enter an end caret because boldface cancels itself at the end of a line.

To boldface the other lines, move the cursor to line 14 column 1 and press the control key and **B**. Now move the cursor to line 7 column 2 and press the control key and **B** again. The formatting is complete. Press OA-S to store the document on disk.

Printing the Formatted Document

It's printing time again, so be sure your printer is on. Press OA-P to start the Print command. Press the return key three times to confirm *Beginning*, the printer, and one copy. The printer whirs. And presto—the magic of formatting did indeed transform an ugly duckling into a swan.

A Few Comments on Newsletters

When you design something a bit out of the ordinary—like this newsletter—have patience, try new approaches, and stop only when you're truly satisfied with the results. With so many formatting possibilities, there's no need to settle for anything less.

Sometimes you'll have to look beyond AppleWorks and your printer. Clearly, a front page with a typeset name is more attractive. In the absence of typesetting equipment, you can use press-on lettering available at graphics-supply stores. Create the name on a separate sheet of paper, trim the paper to size, and apply *art wax* (not glue or scotch tape) to the back so that you can reuse it in succeeding issues. **Figure 3** shows the front page of *The Vollner Voice* with this kind of lettering, hand-drawn lines, and an illustration and text pasted into the right column.

Next month, I'll tell you how to create a spreadsheet to do break-even analysis. ■

Ruth K. Witkin is a consultant in computer applications for business. She is the author of the hotCider Success with AppleWorks (inCider, CW Communications), Managing with AppleWorks (Howard W. Sams & Co.), and Personal Money Management with AppleWorks (Hayden Books). Write to her at 5 Patricia Street, Plainview, NY 11803. Enclose a stamped, self-addressed envelope if you'd like a personal reply.

BACKUP

ESSENTIAL DATA DUPLICATOR

Back up your copy-protected disks with **Essential Data Duplicator 4 PLUS**. ■

EDD 4 PLUS is new technology, not just "another" copy program. The **EDD 4 PLUS** program uses a specially designed hardware card which works with your disk drives to back up disks by accurately copying the bits of data from each track. Don't be fooled. . . no other copy-program/system for Apples can do this! ■ In addition to backing up disks, **EDD 4 PLUS**

includes several **useful** utilities such as examining disk drives, certifying disks, displaying drive speed rpm's, plus more! ■ **EDD 4 PLUS** runs on Apple II, II Plus (including most compatibles), and IIe, and is priced at \$129.95 (duodisk/uni-

disk 5.25 owners must add \$15 for a special cable adapter). Add \$5.00 (\$8.00 foreign) ship / handling

when ordering direct. ■ A standard **EDD 4** version which doesn't include any hardware is available, and can be used on Apple IIc and III (using emulations mode) and is priced at \$79.95. Add \$3.00 (\$6.00 foreign) ship / handling when ordering direct. ■ If you own an earlier version, send us your **EDD** disk and deduct \$50 from your order. ■ Ask for **EDD 4 PLUS** at your local computer store, or order direct. Mastercard and Visa accepted. All orders must be prepaid. ■ In addition, registered owners may purchase **EDD's** printed 6502 SOURCE CODE listing for educational purposes.

UTILICO MICROWARE

3377 SOLANO AVE., SUITE 352
NAPA, CA 94558 / (707) 257-2420

WARNING: EDD is sold for retailing only.

Table continued.

- 14 Refer to **Figure 2** and type the entire paragraph starting with *A lively bash for Vollner employees and their families* (remember, only one space between sentences). Press the return key twice to end the paragraph and insert a blank line. The cursor moves to line 21.
- 21 Type the entire paragraph starting with *Reporters on the scene noted the frenzied activities* and press the return key twice. The cursor moves to line 28.
- 28 Type the entire paragraph starting with *But when the big moment arrived*, and press the return key twice. The cursor moves to line 36.
- 36 Type the entire paragraph starting with *Reliable sources have identified the employees* (this is where you can type your own names). At the end of the paragraph, press the return key three times. The cursor moves to line 49.
- 49 Type **FROM THE STAFF OF THE VOLLNER VOICE:** and press the return key. The cursor moves to line 50.
- 50 Type **OUR VERY BEST WISHES FOR** and press the return key. The cursor moves to line 51.
- 51 Type **A WONDERFUL HOLIDAY SEASON AND THE HAPPIEST OF NEW YEARS.** Your cursor should now be in line 51 column 58.

End of Table.

Figure 3. The front page of The Vollner Voice complete with typeset name, two columns of text, and an illustration.

THE VOLLNER VOICE

Written and Published by the Employees of Vollner Tool & Die Company

December 29, 1986

'TIS THE SEASON...

A lively bash for Vollner employees and their families was held in the company cafeteria on Wednesday to celebrate the Christmas-Chanukah season. The party featured an array of enticing foods from shishkabob to sandwiches, music, and all the soda anyone could drink. According to reports, the event was a smashing success.

Reporters on the scene noted the frenzied activities leading up to the party: mini-meetings to discuss the size of the candy canes and where to buy dreidles, last-minute panic because the dreidles hadn't arrived, frantic phone calls to the caterer who didn't show up with the food until five minutes before party time.

But when the big moment arrived, everything was ready and the extra efforts of everyone involved could be seen in the lavish buffet and lovely decorations. At 3 PM, the guests started arriving. Throughout the afternoon, sounds of laughter, singing, shouting, booming music, and dancing feet were heard. And questions like "How come warm soda?" and "What's a dreidle?" and "Can't we get some air in here?"

Reliable sources have identified the employees who contributed to the success of the party: Joan Lynch for arranging for the food and beverages; Lois Maiwald and Josh Lamhut for setup and cleanup; Willie Chen for getting the candy canes and dreidles; Barbara Santoro for lugging a projector to show the slides of the Vollner 15-Year Club dinner; Jim Vinicombe for being an all-around great Santa Claus; Bob Nelson, Jeff Wennerstrom, Ken Wolin, and all the guys in Maintenance for decorating the cafeteria and arranging the tables...and to all of YOU at Vollner for being a great group of people!

FROM THE STAFF OF THE VOLLNER VOICE:
OUR VERY BEST WISHES FOR
A WONDERFUL HOLIDAY SEASON AND THE
HAPPIEST OF NEW YEARS.



NAMES IN THE NEWS

In this, our first issue of The Vollner Voice, we offer congratulations and continued success to the following employees who are celebrating employment anniversaries this month.

John Schmidlapp, Tool & Die Maker

John's been with Vollner for 14 years and was the first to graduate from our Tool & Die Apprentice Program. He's a member of the Safety Committee.

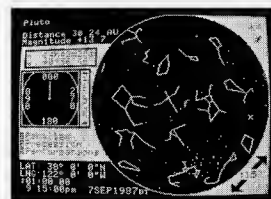
Cathy Stewart, Senior Mechanical Engineer

Cathy started in the Drafting Department and attended college at night to earn her ME degree. She's been with Vollner for 12 years.

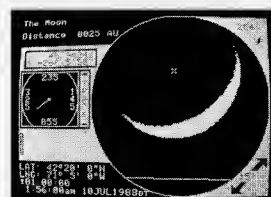
Bob Nelson, Maintenance Supervisor

Bob reached that 10-year milestone last week. Thanks to Bob, a battery cart with jumper cables is available to employees who find themselves unable to start their car in the parking lot.

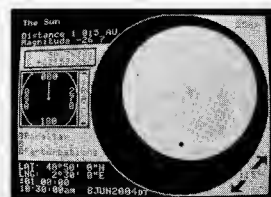
THE OBSERVATORY®



Autumn sky with constellations



Crescent Moon rising



Venus crossing the Sun

THE OBSERVATORY is an exciting sky simulator which is easy enough for the beginner, yet powerful enough for the more experienced astronomer. It displays hundreds of stars, with or without constellation lines, and all the planets as seen from any place on earth and for any time in 10,000 years. With 9 levels of magnification THE OBSERVATORY can bring into high resolution view the phases of the Moon, eclipses of the Sun, the moons of Jupiter, and even the rare solar transits by Mercury and Venus!

"THE OBSERVATORY has many functions that will delight anyone with an interest in astronomy."

— The Apple II Review, Winter, 1985

"THE OBSERVATORY leaves the competition behind. All in all, it's one of the finest micro-computer programs on the market."

— Sky & Telescope, May, 1986

APPLE II+ with 64K, IIe, IIc \$49.95

LIGHTSPEED SOFTWARE

Suite 185, Dept. C
2124 Kittredge Street
Berkeley, CA 94704
(415) 486-1165

Make Check or Money Order payable to Lightspeed Software.
APPLE is a registered trademark of Apple Computer, Inc.

"Array variables can greatly expand your control of data manipulation in your program."



by Dan Bishop

Data Filer, presented in last month's Applesoft Adviser (October 1986, p. 86), illustrates the use of simple READ/DATA commands in BASIC to build a data-base list. In that program, you include a data statement for each record in your data-base list. You list all items associated with a specific record (such as name, address, and phone number) in the same data line. Each line becomes a permanent part of the program itself.

Presenting a list of the records in your "data base" on the video monitor is Data Filer's only function. The program uses a single set of variables for the items it reads from your list. Only the items associated with the most recently read record are present in working RAM at any given time. The program reads each record in the list and displays all items in one record before going on to the next. It has none of the familiar functions of a data-base management program.

This month, I'll introduce the concept of array variables and show how this feature of BASIC can greatly expand your control of data manipulation in your program. Arrays let you keep a large number of related items in memory simultaneously, and use very short segments of program code to process large amounts of information. Without array variables, the capabilities of computer programming would be limited.

The Variable Variable

BASIC uses variable names to "tag" locations in memory that contain values the program needs. For example, define a variable named XX in your program by assigning it the value 12.653:

```
100 XX = 12.653
```

The computer now stores the value 12.653 in memory, and uses that value when the program calls for XX.

You must associate this type of variable with only a single value. If you assign the value -2.24 to XX later in the program, you'll lose the previously assigned value, 12.653. Most computer applications require a way to assign more than one value to a variable name. Consider, for example, a program that searches through a list

of numbers to find the largest one. If you assign each number a unique variable name, such as AA, AB, or AC, then each comparison must have its own unique line in the program.

You can solve this problem by using array variables. An array is a list of variables that use the same variable name. Each variable differs from the others in the list by a number, called a subscript, which you append to the variable name. In BASIC, subscripts are enclosed in parentheses.

For example, you can use RG in a program as a numeric variable name. Similarly, you can use T3 as a unique variable name. You can assign RG and T3 only one value each. But the same program can have array variables RG and T3, and you can assign any number of values to them.

You shouldn't write array variables alone, however. You have to include appropriate subscripts, such as RG(23) and T3(14). (Read these two examples as "RG sub 23" and "T three sub 14.") With these subscripts, the array variable RG can contain at least 24 values (RG(0) through RG(23)), and T3 can contain at least 15 values (T3(0) through T3(14)).

BASIC treats subscripts just like any other numeric values. In fact, you can use any numeric variable as a subscript. If M has a value of 23, and J has a value of 14, then RG(M) and T3(J) refer to the same memory locations and values as RG(23) and T3(14).

This explains the power behind array variables. In BASIC, you can control the values you assign to numeric variables and change them at will with simple arithmetic expressions. If you also use a numeric variable to represent the subscript in an array variable, you can use the same simple arithmetic expressions to refer to different members of the array list.

As an example, the following sequence of BASIC instructions uses the variable J as a loop counter:

```
210 FOR J = 1 TO 12
220 READ CD$(J), CN$(J), ED$(J)
230 NEXT J
```

The program cycles through these three lines 12 times. J has a value of one the first time through, and increases by one with each cycle of the loop.

Program listing. Data-Base Array.

```
1 REM DEMONSTRATION OF ARRAY DEF-
2 REM INITIATION AND LOADING FROM READ
3 REM DATA STATEMENTS CONTAINED IN A
4 REM LOOP.
5 REM      ARRAY FILER
6 REM BY DAN BISHOP
7 REM      APPLESOFT ADVISOR
8 REM      INCIDER MAGAZINE - 11/86
9 REM
10 READ NE
20 DIM CD$(NE),CN$(NE),ED$(NE)
30 GOSUB 100: REM DISPLAY TITLES
40 GOSUB 200: REM READ DATA
50 GOSUB 300: REM DISPLAY DATA
90 END
97 REM
98 REM ROUTINE FOR SCREEN TITLES
99 REM
100 HOME
110 READ T$
120 PRINT T$
130 L$ = "-----"
140 L$ = " " + L$ + L$ + L$ + L$
150 PRINT L$
160 PRINT "COMPANY / CARD NO.", "EXP.DT."
170 PRINT L$
180 PRINT
190 RETURN
196 REM
197 REM ROUTINE TO READ DATA
198 REM
199 REM
200 READ NR
210 FOR J = 1 TO NE
220 READ CD$(J),CN$(J),ED$(J)
230 NEXT J
240 RETURN
296 REM
297 REM ROUTINE TO DISPLAY DATA
298 REM NR RECORDS AT A TIME
299 REM
300 CT = 0
310 FOR J = 1 TO NR
320 CT = CT + 1
330 PRINT CT; ". "; CD$(CT)
340 PRINT "      "CN$(CT);
345 IF LEN (CN$(CT)) < 11 THEN PRINT ,;
346 PRINT ,ED$(CT)
350 IF CT = NE THEN J = NR
360 NEXT J
370 PRINT L$
380 IF CT = NE THEN GOTO 440
390 PRINT "PRESS <RETURN> TO CONTINUE...";
400 INPUT X$
410 HOME
420 GOSUB 120
430 GOTO 310
440 RETURN
496 REM
497 REM DATA BLOCK FOR DATABASE FILES
498 DATA 13: REM # OF ENTRIES IN LIST
499 DATA CREDIT CARD INVENTORY
500 DATA 8: REM # OF RECORDS/SCREEN
501 DATA JACK'S PIZZA, "8-6211-48", "12/99"
502 DATA SUE'S SHOES, "421-37-8", "05/88"
```

Line 220 shows three array variables: CD\$, CN\$, and ED\$. These are all string variables (denoted by the dollar sign following the variable name), and all use J as a subscript. The first time through the loop, the program reads values into CD\$(1), CN\$(1), and ED\$(1). By the 12th cycle through the loop, the program reads values into CD\$(12), CN\$(12), and ED\$(12). Three simple lines assign values to 36 variables! And all 36 variables are present in RAM, available to the program whenever it refers to a specific variable name and appropriate subscript.

The DIM Statement

As long as you follow the rules in naming simple variables, all you need to do to introduce a new variable into your program is use it. The computer expects a one-to-one relationship between variables and values, and can deal easily with unexpected variables.

Things aren't so simple when it comes to array variables, though. Your computer needs to know the number of elements you intend to use when you introduce an array-variable name into your program. Since the computer keeps all the memory spaces for each array together as a block, it needs to know how much memory to reserve for each array before you can use it in your program.

BASIC's dimension statement, or DIM, lets you dimension your arrays. Follow DIM with a list of the array-variable names you plan to use in your program. Use commas to separate the variable names, and add the largest subscript value you intend to use to each variable name. For example,

```
20 DIM CD$(12), CN$(12), ED$(12),
    RG(25)
```

tells the computer to reserve 13 slots in memory for the CD\$ list, 13 for the CN\$ list, 13 for the ED\$ list, and 26 for the RG list. (Don't forget that in each case, there's also a "zeroth" element.)

You can use as many DIM statements in a program as you need, with only two restrictions:

- 1) Array variables must be "dimensioned" before the program can use them. (Most programmers place the DIM statements together at the start of the program.)
- 2) Array variables can be dimensioned only once in a program. Applesoft BASIC doesn't let you redimension them.

Listing continued.

Listing continued.

```

503 DATA THE MERCANTILE,"0817-2553","11/86"
504 DATA DRIVER'S LICENSE,"A-222115","08/89"
505 DATA HAPPY HOUR BAR & GRILL,"000-00-001","09/99"
506 DATA SALLY'S HAIR SALON,"5-928-3",
507 DATA MARTY'S MECHANICS,"522-88-6178","02/88"
508 DATA XYZ INVESTMENTS,"3-6211-8497","10/86"
509 DATA SLICKER OIL CO., "41-28545","08/88"
510 DATA JOE'S TOOL CO., "83214","09/90"
511 DATA LE CAFE CLUB,"523-523-9929","01/87"
512 DATA HARRY'S HEALTH CLUB,"21-88-44-669789","02/92"
513 DATA OLIVE'S GAS-M-UP,"499-276-366",
    
```

End of listing.

The subscripts you use in a DIM statement can be numeric variables, as long as the variable has an appropriate numeric value. (Refer to line 20 in the **Program listing**.)

You don't have to dimension an array variable if the largest subscript you intend to use is 10. However, it's good programming practice to dimension all array variables. The DIM statement helps provide some degree of documentation for your program. It's the only time in BASIC you *declare*, or define, the variables you in-

tend to use. Some programming languages, such as Pascal, require you to declare all variables at the beginning of your program.

Min and Max

For a picture of how arrays can make data manipulation easier, consider the following program segment, which determines the minimum and maximum values a list contains. The segment assumes that an array, RS, has been dimensioned to contain 1001 elements with a DIM RS(1000)

command, and that 1001 values have been read into the array:

```

700 MX = RS(0)
710 MN = RS(0)
720 FOR A = 1 TO 1000
730 IF RS(A) > MX THEN MX = RS(A)
740 IF RS(A) < MN THEN MN = RS(A)
750 NEXT A
    
```

Lines 700 and 710 assign the value in the first array element to MX and MN, the two variables that will ultimately contain the list's maximum and minimum values. Then a FOR...NEXT loop, using A for the loop counter as well as the array-subscript variable, cycles through all of the 1000 remaining values. When the loop encounters a value larger than the current MX, that value replaces the old maximum. When it finds a value smaller than the current MN, the program reassigns MN to that value. When the loop is finished, MX contains the list's maximum value, and MN its minimum value.

Multiple Dimensions

The examples above use a single subscript with each array-variable name. These are *one-dimensional* arrays, or simply lists. For many applications, this is all you need.

Applesoft BASIC lets you define arrays in many more dimensions than just one. For example, suppose you have a two-dimensional grid, like a checkerboard, and need to indicate the presence or absence of some condition relating to each square on the grid. You could assign a value of +1 to a square if the condition is met, and a zero if it isn't.

The easiest way to handle this situation is to use a single array to represent the entire grid. If you call the array SQ, you can pinpoint any square in the grid with a row number and a column number. Thus, SQ(0,0) is the square in the upper left corner of the grid, while SQ(10,15) is the square in the lower right corner (assuming the grid has 11 rows and 16 columns).

You dimension this array with the following DIM statement:

```
DIM SQ(10,15)
```

As you probably guessed, three-dimensional arrays have three subscripts, four-dimensional arrays have four, and so on. Applesoft lets you define up to 88 subscripts for an array variable, probably more than you'll ever need—you'll run out of memory long before you can use an array with that many dimensions!

COPY II PLUS™

THE BEST, MOST COMPLETE ProDOS-DOS UTILITIES.

- Copy files, disks, even entire subdirectories.
- Undelete ProDOS and DOS files.
- Fast 2-pass disk copy on Apple IIe, IIc or Laser 128.
- Tree display for selecting subdirectories—no need to type lengthy "prefixes."
- Alphabetize catalog.
- Convert DOS to ProDOS & vice versa.
- And many more.

BACKUP YOUR PROTECTED SOFTWARE.

With COPY II PLUS' fully automatic bit copier, simply type in the name of the program you want to backup and COPY II PLUS does the rest. (We update COPY II PLUS often to handle new protections; you as a registered owner may update at any time for \$15 plus \$3 s/h.)

Parameters for hundreds of programs are right on disk. Also includes a track editor, sector editor and HI-RES disk display. COPY II PLUS is supplied on a standard ProDOS diskette. Runs on Apple II, II+, IIe, IIc and Laser 128. Requires at least 64K and one or two disk drives.

Call 503/244-5782, M-F, 8-5 (West Coast time) with your in hand. Or send a check for \$39.95 U.S. plus \$3 s/h, \$8 overseas.

\$39.95

Central Point Software
INCORPORATED

9700 S.W. Capitol Hwy., #100
Portland, OR 97219

Winner of A+ Readers' Choice Awards!

Backup utilities also available for the IBM, Macintosh, Commodore 64/128 and Atari ST.

800K for Apple //, Laser 128 Only \$285

Now you can add 800K of Apple Unidisk 3.5 compatible storage to your Apple // *at an affordable price.* Our Universal Disk Controller™ allows you to directly connect virtually any drive made for any Apple (even Macintosh) to your Apple // Plus, //e or Laser 128.

Universal Disk Controller

This new controller card combines the functions of 3½ and 5¼ inch drive controllers into one card. Plug in any 5¼ inch disk drive (it supports both old-style 20 pin connectors and //c style DB-19 plugs). Or directly connect an Apple Unidisk 3.5. But most remarkable, the Universal Disk Controller directly accepts Macintosh compatible 800K and 400K external drives.

Unidisk 3.5 Compatible

When used with a Mac compatible drive, you still get the identical 800K format used by Apple's Unidisk 3.5—at a considerable price savings. Disks created in Apple's Unidisk 3.5 will work with a Mac drive connected to the Universal Disk Controller and vice-versa. Data Transfer rate is up to par, too. The Universal Disk Controller talks to any drive at full speed.

Mix and Match

You pick what two drives to connect. Plug in two 5¼ inch drives and use it as a standard floppy disk controller. Or connect two Mac drives for a total of 1.6 megabytes of storage. Of course, you can combine drives of different types, too. Connect a 5¼ inch drive and a Mac



800K drive, or an Apple Unidisk 3.5 and a Mac drive, or . . .

COPY II PLUS, Free!

Copy II Plus is included free with every Universal Disk Controller. This package of DOS/ProDOS utilities works with 5¼ and 3½ inch drives and was voted the utilities winner of the A+ Readers' Choice Awards.

☐ **Yes**, please send me the Universal Disk Controller Card and drives indicated below.
And include Copy II Plus—free!

☐ **Universal Disk Controller—\$150**

For Apple //+, //e, and Laser 128.

☐ **800K 3.5 inch drive—\$195**

(Works great with Macintosh, too!)

Or save on these combos:

☐ **Universal Disk Controller & 1 drive—\$285**

☐ **Universal Disk Controller & 2 drives—\$475**

And ship them to me at this street address ASAP:

Name _____

Address _____

Daytime phone # (____) _____

Everything is Included

No matter what type of Apple compatible drive you have or plan to buy, everything needed to connect it to the Universal Disk Controller is included. Even older Apple // Plus drives plug in directly without adapter cables.

Available NOW!

Call today and order your Universal Disk Controller. Find out just how inexpensive it can be to add an 800K disk to your Apple!

*Central Point
Software*
INCORPORATED

9700 SW Capitol Highway, #100
Portland, OR 97219



(503) 244-5782

To Order By Mail:

Simply send in this order form with a check (add \$15 s/h, \$30 overseas), or provide your Visa/MC

and expiration date _____

To Order By Phone:

Just call us at **503/244-5782**
8-5 (West Coast time), M-F, with
your   in hand!

*Central Point
Software*
INCORPORATED

9700 SW Capitol Hwy., #100
Portland, OR 97219

You control multidimensional arrays by using nested loops with different loop variables for each dimension. For example, consider the three-dimensional array:

```
DIM A(6,12,9)
```

(This array has $7 \times 13 \times 10$, or 910, elements.) If you want to fill this array with threes (that is, give each array element the value three), you can use the following program sequence:

```
600 FOR X = 0 TO 6
610   FOR Y = 0 TO 12
620     FOR Z = 0 TO 9
630       A(X,Y,Z) = 3
640     NEXT Z
650   NEXT Y
660 NEXT X
```

Or, if you want to fill all the elements that have the same value for all three subscripts with fives, you use a sequence such as:

```
670 FOR X = 0 TO 6
680   A(X,X,X) = 5
690 NEXT X
```

Data-Base Array

The **Program listing** uses three arrays to contain the credit-card information (company, card number, and expiration date) the data statements provide. Unlike last month's Data Filer program, Data-Base Array uses the FOR...NEXT loop in lines 210-230 to read the data base into the arrays CD\$, CN\$, and ED\$. From this point on, the program can call up any element in the data base for processing at any time, without having to reread the entire data base. Consequently, you can separate the loop that displays the data from the loop that reads it. The display loop appears in lines 310-360.

The program adds one line to the display so that short credit-card numbers can't alter the column with the expiration date. Line 345 tells the computer to send an extra tab (denoted by the comma) to the display if the card number contains fewer than 11 characters. (One of life's little mysteries is why, with *only* five billion people on the entire planet, credit-card companies insist on using numbers that contain as many as 16 digits!)

Conclusion

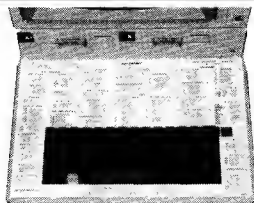
The Data-Base Array program presented this month may not appear to be very different from last month's Data Filer program. Its use of arrays, though, sets the stage for a wide variety of programming capabilities that aren't otherwise possible. In my next column, I'll begin exploiting these capabilities by combining arrays with FOR...NEXT loops to achieve greater display control. So bear with me as we expand the original Data Filer program into a fully functional data-base management system.

In the meantime, add subroutines of your own design to carry out specific tasks with your data base. The best way to learn programming is by doing. Even the hours spent agonizing over a problem that turns out to have a simple solution creates a depth of understanding you can't achieve by simply reading about programming. ■

Write to Dan Bishop at 4124 Beaver Creek Drive, Fort Collins, CO 80526.

LEROY'S CHEATSHEET

Keyboard Overlays & Reference Cards



Keyboard Overlays for your Apple IIc

only
\$5.95
each



Reference Card
for your Apple IIc

Put your Computer's Commands Where They Belong - And Your Manuals On The Shelf.

Have you ever sat at your computer with the manual in your lap trying to find an elusive command? How much time have you lost searching through manuals to refresh your memory on how to do what you wanted? Now you have a way to end that frustration - Leroy's Cheatsheets.

Leroy's Cheatsheets help you get into your program right away. We put the commands right at your fingertips, actual keystrokes are in **bold** type, variables are shown in *italics*. Designed by software experts, our durable plastic laminated overlays are comprehensive reference aids which document a product or system completely. Now use your software more easily and more effectively. With Leroy's Cheatsheets you'll never have to hunt for a program command again!!!

See below for ordering information

Leroy's Apple IIc

DOCU-TRAY™



only
\$12.95
each



Attention Apple IIc Owners !!!

At last you can get your reference material off your lap and put it where it does the most good - right on the computer - at eye level. Leroy's Docu-Tray™ is made of sturdy vacu-formed plastic, supports heavy manuals, is perfect for order-entry or our own reference cards. Specially designed so that it does not block the air vents. Leroy's Docu-Tray™ adds 75 square inches of usable workspace to your IIc.

See below for ordering information

Order Now and Save ... Money, Time and Frustration

Please send me the following Leroy's Cheatsheets for my ☐ Apple IIe or ☐ Apple IIc for only

\$5.95 each (plus shipping).

- | | |
|---|--|
| <input type="checkbox"/> Appleworks | <input type="checkbox"/> Imagewriter printer |
| <input type="checkbox"/> AppleWriter II (ProDOS) | <input type="checkbox"/> Logo (Apple) |
| <input type="checkbox"/> Basic (DOS 3.3) | <input type="checkbox"/> Multiplan |
| <input type="checkbox"/> Basic (ProDOS) | <input type="checkbox"/> Newsroom |
| <input type="checkbox"/> Blanks (3 not laminated) | <input type="checkbox"/> ProDOS Utilities |
| <input type="checkbox"/> Elite | <input type="checkbox"/> Screenwriter II |
| <input type="checkbox"/> Fleet System 3 | <input type="checkbox"/> SuperCalc 3a |
| <input type="checkbox"/> Flight Simulator II | <input type="checkbox"/> Visicalc |
| <input type="checkbox"/> For The Beginner | <input type="checkbox"/> Wordstar |

MORE AVAILABLE...WRITE FOR FREE CATALOG

Phone orders welcome - HOURS 7:30 AM to 5:00 PM Mon. thru Fri.

Name _____

Address _____

City _____

State _____

Zip _____



☐ Visa ☐ Master Card ☐ Payment Enclosed

Card # _____

Exp. _____/____

☐ Please send me _____ Leroy's

DOCU-TRAY(S) for my Apple IIc for only

\$12.95 each (plus shipping).

HOW TO ORDER:

➔ Send personal check, money order or Master Card / VISA card information.

SHIPPING:

➔ Leroy's Cheatsheets \$1.00 per order (Foreign Orders \$3.00)

➔ DOCU-TRAY \$2.00 each U.S. \$3.00 each Canada, Alaska, Hawaii, APO, FPO

\$7.00 each for Foreign orders.

TAXES:

➔ Add 6% (include shipping) for PA residents only

No surcharge for Visa or Master Card

U.S. FUNDS ONLY NO C.O.D.

C1D11

CHEATSHEET PRODUCTS, INC. P.O. Box 111368 Pittsburgh, PA 15238 (412) 781-1551

Apple and ProDOS are Trademarks of APPLE COMPUTER INC.

EXPAND Your Laser 128

16 bit processor, 1 meg RAM boards, 3½ inch drives...

One of the reasons you bought your Laser 128 personal computer is its expansion capability. You knew that a computer without expansion slots is a dead-end that stays behind as technology advances. Now you're ready to expand your Laser 128 to take advantage of extra memory, second disk drives, 3½ inch 800K drives, 16 bit processors, and more...

Expansion Box

The optimum way to take advantage of the Laser 128's expansion slot. The Laser 128 Expansion Box gives your Laser two fully protected, shielded, standard Apple compatible expansion slots (slots 5 and 7). It even includes its own power supply for power-hungry cards and a safety interlock switch that disconnects the 12 volt power supply if the cover is opened. Its solid metal construction insures that even a fully-expanded Laser 128 won't interfere with radio or television equipment. Best of all, its two full-length slots will accept virtually any Apple-compatible expansion card at a price that won't break your budget. (Available soon.) **\$79.95**

800K, 3½" Drives

Add 800K of Apple Unidisk 3.5™ compatible storage to your Laser 128 and pocket over \$180 in savings! Our Universal Disk Controller™ accepts two drives and you can even mix and match 5¼" and 3½" drives. And disks made with the Universal Disk Controller are fully interchangeable with Apple's Unidisk 3.5. Price includes controller card (plugs into Laser 128 Expansion Box) and one 3½" 800K drive (see our other advertisement in this issue). **\$285.00**



5¼" Second Disk Drive

Add a second disk drive designed specifically for your Laser 128. It plugs right into the external disk drive port on the Laser 128 and is one of the quietest drives available. **\$150.00**

Memory/16 bit Expansion

The Laser 128 Expansion Box works well with the latest Appleworks compatible memory boards from APPLIED

ENGINEERING (RAMFACTOR), AST (SPRINT DISK) and several others. We now stock Applied Engineering's RAMFACTOR board with 256K memory installed. For a limited time, buy a RAMFACTOR, and we'll give you the Laser 128 Expansion Box, free! We also stock the Applied Engineering Transwarp Accelerator card with the 16 bit option to run your Laser 128 3½ times faster. See Applied Engineering's ads in this issue for more information.

Laser 128

The Apple //e compatible computer that brings you the best of all worlds: Transportable like the //c, expandable like the //e, but priced like a Commodore 128! No wonder **A+ magazine calls the Laser 128 the "clear winner" of Apple compatibles! \$395.00**

*Central Point
Software*
INCORPORATED

Yes, I'm ready to expand my Laser 128! Please send me these items:

- ☐ **Universal Disk Controller and 800K 3½" Disk Drive**—\$285 & 12 s/h
- ☐ **Laser 128 5¼" Disk Drive**—\$150 & 10 s/h
- ☐ **RAMFACTOR™ with 256K Memory**—\$239 & 10 s/h
- ☐ **Transwarp™ Accelerator Card with 16 Bit Processor Option**—\$249 & 6 s/h
- ☐ **Laser 128 Computer**—\$395 & 20 s/h

And ship them to me at this street address ASAP:

Name _____
Address _____
Daytime phone # (____) _____



To Order By Mail:

Simply send in this order form with a check or provide your Visa/MC

and expiration date _____

To Order By Phone: Just call us!

503/244-5782

8-5 (West Coast time), M-F, with your   in hand!

*Central Point
Software*
INCORPORATED

9700 SW Capitol Hwy., #100
Portland, OR 97219

*"You can
'teach' the
versatile
AppleWorks
data base to
format and
print your
exams."*



by David Goodrum
and Joel Robbins



To foil peepers and cribbers, teachers writing exams have to spend a lot of time cutting and pasting, copying, and moving questions to get different versions of each test. Many teachers abandon word processors and seek out separate test-writing programs, a number of which are slow, cumbersome, and unfriendly.

The versatile AppleWorks data base is a better choice: You can "teach" it to format and print a multiple-choice or true/false exam in several versions. TestMaker, the name we'll give our test-writing data-base template, has a lot of flexibility, too. The printed test will look as good as any you'd type into a word processor; AppleWorks' print-formatting capabilities will automatically take care of page breaks; you can use TestMaker for one exam

or a library of questions from which to pick and choose; you can easily rearrange questions for different versions of the same test; and TestMaker will work for multiple-choice or true/false questions.

Setting Up Your Test Maker

The keystrokes listed in **Table 1** will help you design the data base

and type in a few sample questions.

The first category will contain the question number; type in "1." and hit Return. Type in the sample question and choices as shown in **Figure 1**. Note that the data base can't perform word wrap, so you must break the question into separate lines. TestMaker gives you up to three lines for your question. If you usually write longer questions, you can design your data base with additional space.

The sample shows up to five lines for choices, but you're not limited to five choices: Since you're labeling an-

swers with A, B, C, and so on, you can place more than one choice on each line, up to the full width of the screen. This arrangement accommodates short or long answers; an answer can even continue onto a second line. And you can use TestMaker for writing true/false exams: Instead of several choices, T and F would be the only options.

After you place the answer in the ANS category and hit Return, you'll see another blank record. Type in a few sample questions of your own; experiment with questions of different lengths and with varying arrangements of choices.

When you finish entering questions, press the escape key to return to Review/Add/Change, then type OA-Z (zoom) to view the file in multiple-record format.

Customizing and Printing

You now need to customize the layout of the data-base screen to see the question number, the first part of the question, and the reference. When you're trying to get a quick overall view of your test questions or need to choose questions for a particular test, this view should give you enough information to make your decisions and number your questions. Follow the keystrokes in **Table 2** to customize the TestMaker layout to resemble **Figure 2**.

The template is still incomplete until you create a Print Format that will get the test out of the computer and onto your printer paper. You want a label-type print report that will omit blank lines and allow for different question sizes and printed spaces between questions. AppleWorks will automatically keep a question and its choices together, so that questions won't be split across the page break.

Follow the keystrokes in **Table 3** to make the Print Format called PRINT TEST as shown in **Figure 3**.

TestMaker is now ready for action. Type OA-P (print) and respond to prompts to print your first test. If you're a teacher, grab a few students for a pop quiz. If you're not a teacher, give your children or relatives an exam on Who's Who in your family. Don't forget to type the documenta-

At Last! A Chess Program that's On YOUR Side!

**Paul Whitehead
Teaches Chess
\$49.95**

Now, over 40 hours of interactive animated chess instruction are yours, from the mind of an American Open Champion. For beginners to seasoned tournament players, the techniques of a top master are exposed!

Here is a sampling of what you will see come to life on the screen:

- Rules
- Chess Notation
- Opening Principles
- Piece Development
- Surprise Checks
- Greed
- Traps
- "Desperado" Moves
- Pins
- Forks
- Skewers
- Overloaded Pieces
- In-Between Moves
- Back-Rank Checkmate
- Smothered Mates
- Stalemates
- Sacrifices
- Blockades
- Fianchettoes
- The Lucena Position
- King & Pawn Endings
- The Active Rook

- Perpetual Check
- Tempo & Zugzwang
- Isolated Pawns
- Passed Pawns
- Opposition of Kings
- Triangulation
- Hypermodern Attack
- Classic Openings
- Quizzes
- Tactics For Each Piece
- Weak Points in the Opening
- Brilliant Queen Moves
- King as a Pawn Escort
- The 3-Pawn Breakthrough
- Opposite Color Bishops
- Good & Bad Pawn Positions
- Converting a Material Advantage to a Win
- Forcing Checkmate Using Various Piece Combinations

... and more!

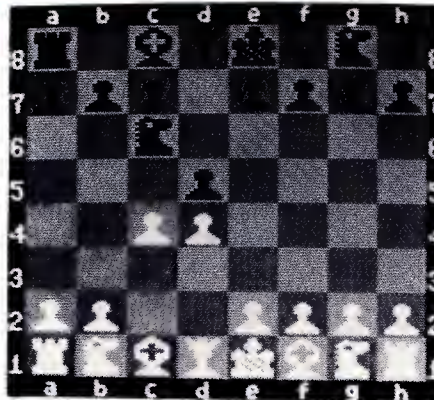
ROAD MAPS

Each package includes a detailed two-sided ROAD MAP that lets you keep track of your journey through the tutorial database. The Road Maps label the parts of the tutorial both by topic and by Board Number. Using the Board numbers and the EXPRESS DEPOT feature, you can hop around the tutorial at will. You can also skip over material you already know.

When you want to test your new knowledge against an opponent, a single key calls the COFFEEHOUSE CHES MONSTER opponent program. It will automatically set up the position you were viewing in the tutorial, offer you a new game, or let you enter a game from a newspaper listing. This is a fully-featured opponent program, which allows you to save an unlimited number of your own games onto disk, modify them, print them out, and re-animate them later.

ORDER TOLL FREE! 1-800-621-0851 x 100

Enlightenment, Inc.

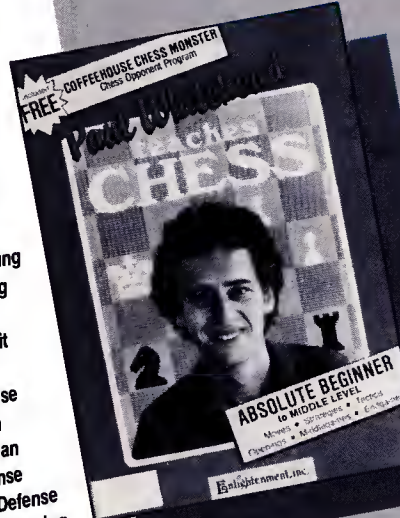


BOARD 180

**MOVE 3 White
Hit Choice
1=Mf3
2=cxd5**

Chigorin's Defense. A fighting defense. Black develops a piece and attacks in the center. White's Choice: 1=Mf3 is a good developing move; 2=cxd5 is premature.

**IBM PC/PC jr (color or mono)
Apple II (64K)
Commodore 64
Atari ST (December 1st)**



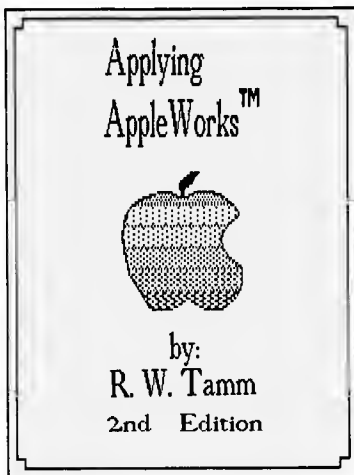
YES! Please rush me PAUL WHITEHEAD TEACHES CHESS!

Name _____
Address _____ State _____ Zip _____
City _____

Please enclose \$50.50 (outside Calif.) or \$53.75 (Calif. residents - includes sales tax) per unit... includes shipping & handling. Please send to: ENLIGHTENMENT INC., 1240 Sanchez St., San Francisco, CA 94114.

DELIVERY: 5 days from receipt of order.

☐ IBM PC/PC jr ☐ Apple II ☐ Commodore 64 ☐ Atari ST
Enclosed is: \$ _____



APPLYING APPLEWORKS™ FIRST EDITION SOLD OUT!

NEW SECOND EDITION
NOW AVAILABLE

**Teachers! Coaches!
Businessmen! Everyone!**

DISCOVER the Appleworks™ book written with educators in mind. Go from beginner to advanced applications.

CREATE your own standard letter formats, seating charts, gradebooks, test question bank, sports scoring sheets, accounting ledgers, mailing labels, budgets, bibliography files and much more.

DISCOVER the integrated use of the UNIDISK 3.5, Pinpoint™, Appleworks Mailing Program, Spellcheckers, Proofreaders, and many other Appleworks™ compatible software and hardware.

TEMPLATE DISKS for APPLYING APPLEWORKS™ are available.

SEND \$11.95 plus \$1.50 for shipping, a total of \$13.45 in U.S. funds (Add \$5.00 for countries other than USA, Canada, or Mexico.

BRISTEN PRESS
DEPARTMENT IN
P.O. BOX 336
NEW HARTFORD, NEW YORK 13413

ISBN 0-936337-01-X
APPLYING APPLEWORKS™

tion in **Figure 4** into an AppleWorks word-processing file you name "DOC.testmaker" and save it on the same disk with TestMaker.

Next month we'll take a break from AppleWorks and "get down to BASICS" to create a program that converts raw scores to percentages and letter grades. ■

David Goodrum and Joel Robbins are the developers of SchoolWorks, AppleWorks templates for education, published by K-12 MicroMedia Publishing. Write to them at Tulip Tree House 1016, Bloomington, IN 47401. Enclose a self-addressed, stamped envelope if you want a personal reply.

Figure 1. Sample question 1 as it appears on your AppleWorks screen.

```
File: TESTMAKER          INSERT NEW RECORDS          Escape: Review/Add/Change

Record 1 of 1
=====
: 1.
QUESTN: In quest of the New World, what ships were taken by Christopher
-: Columbus?
-: -
:: A. Nina
:: B. Pinta
:: C. Santa Maria
:: D. All of the above
-: -
REF: -
ANS: D.

-----
Type entry or use @ commands                                @-? for Help
```

Figure 2. Customizing the Record Layout on your AppleWorks screen.

```
File: TESTMAKER          CHANGE RECORD LAYOUT          Escape: Review/Add/Change

=====
--> or <-- Move cursor
> @ < Switch category positions
--> @ <-- Change column width
@-D Delete this category
@-I Insert a previously deleted category

-----
QUESTN                                REF
1. In quest of the New World, what ships were taken by Christopher

-----More-->
Use options shown above to change record layout              50K Avail.
```

Figure 3. Creating a Print Format on your AppleWorks screen.

```
File: TESTMAKER          REPORT FORMAT          Escape: Report Menu
Report: PRINT TEST
Selection: All records

=====
: 1. <QUESTN
:
:
:
:
:
:
-----Each record will print 9 lines-----
Use options shown on Help Screen                                @-? for Help
```


Figure 4. Documentation for TestMaker data-base template.

TEMPLATE: TESTMAKER, data base

USES: You can make and store multiple-choice or true/false questions in a file, then number or renumber the ones you want for a particular test. The printout will format the questions, allow a place for the student answer, and allow a place for instructions, class name, date, and the student's name.

PRINT FORMAT: PRINT TEST, labels: gives a printout of the test questions you've created or selected.

REMEMBER: In the multiple-record viewing mode, you'll see only the first line of the question and the REF (reference) category. In the single-record viewing mode you'll see the entire question, page, chapter or unit reference, and answer.

THINGS TO TRY:

1. Be in the single-record viewing mode--use Apple-Z (zoom) if necessary. Use Apple-I (insert) to start inserting or adding new questions.
2. Leave the ____: (number) category blank for now, or go ahead and insert a number. Or, leave it blank or use a zero, and you can use this record for INSTRUCTIONS for the test (when you arrange by number field, a blank category will go to the top of the list).
3. Of course, there's no word-wrap, so you must finish or hyphenate a word near the end of a line (category QUESTN) before proceeding to the second or third line (blank category).
4. There are four categories that appear as ____: ____: ____: ____: . These are for your choices. Longer choices should be put on separate lines. Shorter ones can be put together; for example:

A. Nina B. Pinta C. Santa Maria

This gives a lot of flexibility to the maximum number of choices. In fact, you could even extend the question onto these lines if necessary. If a category is left blank, nothing will be printed, so there's not a lot of wasted space on the test.

5. The category REF can be used for a page, chapter, unit, book reference, or key word. Arrange (OA-A) by this category to group questions. Category ANS is for the answer.
6. Choose the questions you want for a particular test by placing the question number or question letter in the ____: Category. You can do this quickly while in the multiple-record viewing mode.
7. Sort the questions on the ____: Category, 0-9.
8. Use OA-P (print) to proceed to the Print Format Catalog, highlight PRINT TEST and hit return. Use OA-R (range), if necessary, to choose the range of questions you want (there are a few steps to this process; watch the prompts on the screen). Use OA-N (name) and return to go to the line where you can specify the class name and date. Press OA-P again to continue the printing process.
9. Print another copy of the test with the questions rearranged simply by renumbering the questions and pressing OA-A (arrange).
10. Build up a whole list of questions, then go into the file and choose the few you want, using OA-R (record selection) to choose only those questions in the ____: Category that Are Not Blank.
11. You can also use this template for true/false questions. Leave the lines for choices blank: Only the question with a line for the student's T or F will print.

Go On-Line For Less! Call Diversi-DIAL™

Stop paying by the hour to go on-line! Call your local **Diversi-DIAL** for a low, monthly fee. Soon you'll have a whole new group of friends, maybe even meet that special someone!

Every evening, **Diversi-DIAL** stations from all over the country link together in huge networks. You'll make long-distance friends, without long-distance phone bills!

For a list of **Diversi-DIAL** stations, call 313-553-4373 (300-baud modem). Long distance callers can use PC Pursuit™. For info on starting your own station, send \$5 for the **Diversi-DIAL** demo disk.

PC Pursuit™ is a service mark of GTE Telenet. Call 800-368-4215 for info.

Diversi-DOS™ Still The Best!

The top-rated DOS 3.3 enhancement program. Speeds up BASIC, binary, and TEXT file disk I/O. DOS Mover frees up 10K memory. Includes new insert/delete mode, improved BASIC listings, keyboard MACROS, wildcard filenames, text file printer, RAM disk emulator, fast garbage collector, and more!

Back-up Your Floppy With Diversi-COPY™

The **FASTEST** way to copy (or format) unprotected DOS 3.3, ProDos, Pascal or CP/M disks.

Verifies every byte, so you know your copies are good.

Mass produces 1 floppy disk every 18-20 seconds.

NEW! UNIDISK 3.5 COMPATIBLE

Now you can copy or mass-produce 3.5 inch disks at maximum speed. Uses up to 800K memory on any auxiliary slot RAM card, or the new Apple RAM card, for 1-pass copying.

<input type="checkbox"/> Diversi-DOS™	\$30
DOS 3.3 enhancement	
<input type="checkbox"/> Diversi-COPY™	\$30
Hi-speed disk back-up/format	
<input type="checkbox"/> Diversified Accountant™	\$475
Job Cost System	
<input type="checkbox"/> Demonstration Disk	\$5
<input type="checkbox"/> Diversi-DIAL™	\$475
7-line C.B.-simulator	
<input type="checkbox"/> Demonstration Disk	\$5

24-Hour Toll-Free Ordering

800 835-2246 ext. 127 (orders only)
For information call 313 553-9460

FREE: Dogfight II arcade game included with Diversi-DOS and Diversi-COPY

All programs work on Apple IIe, IIc or 64K Apple II+ compatible computers.

Sold by Mail-Order Only. Price includes 1st class or foreign airmail.

C.O.D., Visa/Mastercard (Include Exp. Date)
Personal Check, Purchase Orders accepted

Diversified Software Research, Inc.
34880 Bunker Hill
Farmington, MI 48018-2728

dsr

GOLEM COMPUTERS

APPLE SOFTWARE/HARDWARE AT SUPER SAVINGS

PLACE ORDERS TOLL FREE

1-800-345-8112
PA 1-800-662-2444



LIST
PRICE

GOLEM
PRICE

HARDWARE SPECIALS

212 APPLE CAT II SYSTEM (NOVATION)	365.00
MICROMODEM IIE/SMARTCOM I (HAYES)	131.00
SMARTMODEM 300/SMARTCOM IIC (HAYES)	155.00
SMARTMODEM 1200 RS-232 (HAYES)	374.00
PROMODEM 1200A W/SOFT (PROMETHEUS)	245.00
PROMODEM 300C IIC (PROMETHEUS)	77.00
MACH III JOYSTICK W/FIRE BUTTON (CH PROD.)	31.00
GRAPPLER + (ORANGE MICRO)	72.00
BUFFERED GRAPPLER + (ORANGE MICRO)	119.00
PRINTER MSP-20 (CITIZEN)	350.00
PRINTER MSP-10 (CITIZEN)	250.00
MONITOR VIDEO 300A AMBER (AMDEK)	127.00
BLANK MEDIA SS/DD 10 (GOLEM)	8.50

EDUCATION

TYPING TUTOR III	49.95	29.00
MATH BLASTER!	49.95	26.15
TURBO TUTOR (REQ. CP/M)	34.95	22.00
MASTER TYPE	39.95	23.40
READER RABBIT	39.95	23.40
WORD ATTACK!	49.95	26.15
WHERE IS CARMEN SANDIEGO	39.95	23.40

HOME

DOLLARS AND SENSE II +/file 64K	100.00	66.00
DOLLARS AND SENSE IIE/IC 128K	119.95	66.00
CROSSWORD MAGIC	49.95	29.15
NEWSROOM	49.95	34.00
CLIP ART VOL. 1 FOR NEWSROOM	29.95	17.00
CLIP ART VOL. 2 FOR NEWSROOM	39.95	22.00

UTILITIES

THE PRINT SHOP	44.95	26.50
THE PRINT SHOP GRAPHICS I, II, III	ea. 24.95	14.25
SIDEWAYS	60.00	31.10
TURBO PASCAL (REQ. CP/M)	69.95	36.30
TURBO TOOLBOX (REQ. CP/M)	69.95	36.30
CROSSTALK (REQ. CP/M)	195.00	112.90

WORD PROCESSING

SENSIBLE SPELLER IV		
(DOS, PRO DOS)	ea. 125.00	64.00
HOMEWORD (64K, 128K)	ea. 69.95	40.70
PFS:WRITE IIE	125.00	70.00
BANK STREET WRITER (64K or 128K)	ea. 69.95	40.90
BANK STREET SPELLER	69.95	40.70
SENSIBLE GRAMMAR CHECKER	99.95	53.00

BUSINESS

PFS: REPORT, FILE, GRAPH	ea. 125.00	70.00
BACK TO BASICS ACCT. SYS. IIC	195.00	96.45
THINK TANK	150.00	77.85

RECREATION

GATO	39.95	21.00
SARGON III	49.95	29.15
FLIGHT SIMULATOR II	49.95	31.90
WISHBRINGER	39.95	22.85
SPY HUNTER	44.95	26.40
KARATEKA	39.95	20.50
F-15 STRIKE EAGLE	34.95	20.75
ZORK I	39.95	22.85
ZORK II, III	ea. 44.95	25.60
ALTER EGO (Male or Female)	ea. 49.95	29.20
ULTIMA II, III	ea. 59.95	34.00
WIZARDRY	44.95	29.15
HITCHHIKERS GUIDE	39.95	22.85
LEGACY OF LYLGAMYN	39.95	23.40
KNIGHT OF DIAMONDS	34.95	20.35
KING'S QUEST	49.95	29.15
DRAGON WORLD	39.95	23.40

PLACE ORDERS TOLL FREE 1-800-345-8112 • PA 1-800-662-2444

ALL ITEMS SUBJECT TO AVAILABILITY
PRICES SUBJECT TO CHANGE WITHOUT NOTICE

To order call toll free or send check or money order VISA/MC C.O.D. orders welcome. Personal and company checks allow 10 working days to clear. Specify if to backorder or to send refund. California residents add 6% sales tax. Include phone number with order. Shipping and handling: All shipments U.P.S. if possible. Continental U.S. add \$2.50 for 1 to 3 items. 4 to 6 items add \$5.00. APO, FPO Alaska, Hawaii and Canada add \$3.00 per item. 2nd day air add \$3.00. All hardware purchases are prepaid or VISA/MC; shipped U.P.S. - include 5% for shipping & handling. C.O.D. orders all \$1.90. Mail orders to:

GOLEM COMPUTERS

P.O. BOX 6698 • WESTLAKE VILLAGE, CA 91359

Apple is a trademark of Apple Computers, Inc.

TEACHERS' CHOICE

Table 1. Designing TestMaker.

From the AppleWorks Main Menu, the following keystrokes will set up the data base file for our multiple-choice test writer.

1 (return)	Chooses: Add files to the Desktop
4 (return)	Chooses: Data Base
1 (return)	Chooses: From scratch
TESTMAKER (return)	Names our data-base file
(OA-Y)	Yanks the label: Category 1
(underline key twice) (return)	Makes our answer blank for each question and gives us the category for the question number
QUESTN (return)	Names our Question category
- (return) - (return)	Gives us two more lines for each question
: (return) : (return) : (return)	
: (return) : (return)	Adds up to five lines for the choices
REF (return)	Gives us a place for a textbook reference
ANS (return)	Puts in a place for the answer
(escape)	Exits template-design section
(space bar)	Places us into Insert New Records

Table 2. Keystrokes customizing the TestMaker layout.

From the multi-record view:

(OA-L)	Allows us to customize layout
(OA-left arrow 12 times)	Narrows the first category, leaving enough room to show the question number
(right arrow twice)	Moves cursor to 3rd category
(OA-D seven times)	Removes choice categories from view in the multiple-record view
(right arrow)	Moves cursor to ANS category
(OA-D)	Removes ANS category from view
(left arrow twice)	Moves cursor to the Q in the QUESTN category
(OA-right arrow until the REF category is pushed to the right-hand side of the screen)	Gives the 1st line of the question full view
	Now compare to Figure 2
(escape)	Quits customizing the screen layout
(return)	Chooses DOWN as the direction of RETURN

Table 3. Designing the TestMaker Print Format.

From Review/Add/Change of TESTMAKER:

(OA-P)	Begins the print-format process
3 (return)	Creates a new "labels" format
PRINT TEST (return)	Names our print format
(OA-V)	Prints category name AND entry for our _: (Number) category
(down arrow once)	Moves cursor onto the QUESTN category
(OA-right arrow 7 times)	Moves QUESTN to the right
(OA-up arrow once)	Moves QUESTN up next to the _: category
(OA-J)	Causes the entry in QUESTN to always print one space after the question number
(down arrow)	Moves cursor to blank space
(OA-D)	Deletes empty line
(arrow down and over to the beginning of REF)	Positions cursor on R of REF
(OA-D three times)	Deletes REF and ANS categories and leaves a blank line
(OA-N) (return)	Takes us to a blank line above the print format
NAME _____ (return)	Creates a space for student name (use this to list class name and date or other info)
(OA-O)	Takes us to Printer Options
PH (return)	Takes away the report Header
KS (return)	Allows for questions of different length
BM (return) 1 (return)	Changes Bottom Margin to one inch
(escape)	Exits Printer Options

Complete Apple® Compatible Word Processing System

Home • Business • Word Processing

Complete System
\$499.00

- 15 Day Free Trial
- 90 Day Warranty



Look At All You Get For Only \$499.00

- Laser 128 Apple Compatible Computer
- Big Blue 8½" Letter Size 80 Column Printer
- 9" Samsung Green Screen Monitor
- Magic Window IIe Word Processor
- Magicalc Spreadsheet
- Magic Memory Data Base
- Laser 128 Printer Interface
- 2 Rolls of Paper

List Price

\$499.00
199.00
129.95
150.00
150.00
60.00
19.95
19.95

Comparable Apple System (\$2495.00)

1227.85

Save
Over
\$700.00

All 8 Pieces only \$499.00

Magic Window IIe Word processing is easy and more efficient because of a simple-to-read menu system and editing commands. Many powerful features at professional quality programs and more. Supports virtually all major printer functions. Operates with most 80-column video cards or 40/70 column no-hardware modes.

Magicalc Rated as the best electronic spreadsheet on the market for Apple®. The speed with which Magicalc solves number problems allows you to accurately analyze decisions beforehand. Supports multiple RAM cards of most manufacturers in any combinations up to a full 512 K.

Magic Memory File anything, any way you want to: names, addresses, important numbers, dates and notes. Your information is organized simply, easy to maintain, and available instantly. Supports all popular printers and video cards.

Apple® is a registered trademark of Apple Computer Inc.

Add \$30.00 for shipping, handling, and insurance. Illinois residents please add 6 1/2 % sales tax. Add \$60.00 for CANADA, PUERTO RICO, HAWAII, ALASKA, APO-FPO orders. All orders must be in U.S. Dollars. WE DO NOT EXPORT TO OTHER COUNTRIES EXCEPT CANADA. Enclose Cashier Check, Money Order or Personal Check. Allow 14 days for delivery, 2 to 7 days for phone orders, 1 day express mail. Prices & Availability subject to change without notice.

VISA — MASTER CARD — C.O.D.

C.O.D. on phone orders only.

Computer Direct

We Love Our Customers

22292 N. Pepper Rd., Barrington, Illinois 60010

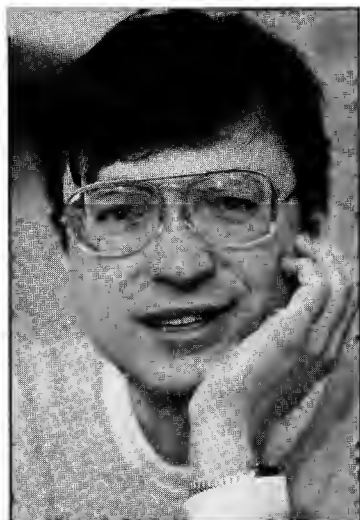
312/382-5050 to order

Circle 111 on Reader Service Card.

PASCAL PRIMER

Large-Program Tools—Part 1

“Apple Pascal comes with tools to help you divide large programs into manageable pieces.”



by Tom Swan

Apple Pascal comes packed with tools for writing large programs. Three of these tools—chaining, segments, and units—can help you compile massive projects, even those with tens of thousands of statements, that run as though your 64K Apple had many times as much memory. This month I'll explain how to use chaining and segments to divide large programs into manageable pieces. I'll cover units in the next part of this two-part miniseries.

Hoisting the Pascal Chain

Imagine a chain passing through several programs you want to run in order. If you could stand inside your Apple and wind in the chain, you'd pull each successive program into memory. The programs would appear to run as a unit, perhaps with brief pauses at the start of each new link in the chain as you—with a little help from the Pascal operating system—haul in programs from disk.

You form such imaginary chains by telling your programs which new programs to run next. As an example, type in **Listings 1, 2, and 3**. (See the September 1986 Pascal Primer, p. 93, for complete instructions for typing Pascal listings.) MENU, CHOICE1, and CHOICE2 demonstrate a typical menu-driven design that runs as a collection of chained programs. In this demonstration, the menu selections A(dd and D(elete are merely for show—they don't actually add or delete anything. Compile and execute MENU (**Listing 1**) to start the demo. Type A to run sub program CHOICE1 (**Listing 2**); type B to run CHOICE2 (**Listing 3**); type Q to quit.

MENU chains from one program to another with help from the ChainStuff library unit—a collection of precompiled routines, plus a few other goodies. The actual programming for ChainStuff is in file SYSTEM.LIBRARY on your APPLE1: disk. Line 2 of MENU includes this programming with the phrase “uses ChainStuff;” immediately after the program declaration.

Parents and Children

Chaining occurs in procedure ChainTo in lines 7–12 of the main program, MENU, which some pro-

grammers call the *parent process*. Line 9 gives procedure SetChain the name of the next program, or *child process*, in the chain. SetChain merely prepares for an eventual chain to another program. The actual chaining occurs when the parent process ends, passing control to its child.

This leads to two methods for running a child process. As the MENU example shows, you can use the statements

```
SetChain( ProgramName );  
Exit( program );
```

to tell ChainStuff which program to run when it gets to the Exit statement. An even easier method is simply to end your program the usual way. Whichever method you use, ChainStuff executes the program name you last gave to SetChain.

Errors in Chaining

If one program chains to a non-existent program, the computer displays the error message “No file CHOICE1.CODE” and halts. To avoid this error, replace procedure ChainTo in the MENU example with the programming in **Listing 4**. Now, before chaining, the new procedure tries to reset the filename you give ChainTo. If that fails, it asks you to insert the correct disk, waits for you to press the return key, and then tries again. You could use this method to chain together dozens of programs from several disks.

To see how this works, make a copy of your boot disk containing the three demonstration programs. Remove CHOICE1.CODE from one disk and CHOICE2.CODE from the other. Execute MENU and select the A(dd or D(elete operation. If MENU can't find the program for your selection, it asks you to insert another disk and press return.

Notice that line 7 in the new ChainTo adds .CODE to ProgramName in a concat (concatenation) statement. Because of this, you can't use a statement such as ChainTo ('CHOICE1.CODE') or the program will mistakenly look for a file named CHOICE1.CODE.CODE. Notice also how the procedure turns off input/output error checking with the compiler option (*\$I-*) in line 5. If the built-in

function `ioresult` returns zero with this option in effect, then no error occurred. Otherwise, the program knows that the reset in line 13 failed, and asks you to insert another disk.

Other Chaining Procedures

`ChainStuff` has a few other useful procedures. `SetCval` stores a string in memory where a child process can read it with procedure `GetCval`. (*Cval* means *common value*.) This lets a parent process pass information to its children—the only direct method for passing data from one chained program to another.

One neat use for `SetCval` is to pass what I call a *ComeFrom* value to a child process. A *ComeFrom* value is a string containing the filename of the parent process that chained to one of its children. The child reads the *ComeFrom* value to discover the name of its parent and can then chain back to the parent program that called it. This lets programs return to different callers in complex menu-driven systems in which two or more menus call the same sub program.

You can better understand this idea with an experiment. Add the following line between lines 14 and 15 in **Listing 1**, the parent process:

```
SetCval( 'MENU' );
```

Then add this string-variable declaration between lines 3 and 4 in **Listings 2** and **3**, the children:

```
VAR
  ComeFrom : string;
```

Finally, replace line 9 in **Listings 2** and **3** with the following two lines:

```
GetCval( ComeFrom );
SetChain( ComeFrom );
```

After recompiling `MENU`, `CHOICE1`, and `CHOICE2`, you're ready for the test. Execute `MENU` and select the dummy `A(dd)` and `D(elete)` operations; they should work the same as before. Quit `MENU` and execute `CHOICE2` directly from the Pascal command line. What then happens when you press return?

Instead of chaining back to `MENU`, the program simply ends because line 24 in `MENU` passes a zero-length, or null, string to `SetCval` when you quit the program, and chaining to a null string simply ends the program.

Knowing this, you can design sub programs that operate as children of a main parent (`MENU` in this example), or as the adopted children of still other parents. (Try writing your

Listing 1. MENU.TEXT.

```
0: PROGRAM Menu;
1:
2:   Uses ChainStuff;
3:
4: VAR
5:   ch : Char;
6:
7: PROCEDURE ChainTo( ProgramName : string );
8: BEGIN
9:   SetChain( ProgramName );
10:  Write( 'Chaining to ', ProgramName, ' ...' );
11:  exit( program );      (* chain occurs here *)
12: END;
13:
14: BEGIN
15:   Page( output );      (* clear screen *)
16:   Write( 'Menu: A(dd, D(elete, Q(uit ? ' );
17:   REPEAT
18:     read( keyboard, ch );
19:   UNTIL ch in [ 'A', 'D', 'Q' ];
20:   Writeln( ch );
21:   IF ch = 'A' THEN ChainTo( 'CHOICE1' )      (* A(dd *)
22:   ELSE
23:   IF ch = 'D' THEN ChainTo( 'CHOICE2' )      (* D(elete *)
24:   ELSE SetCval( '' );
25: END.
```

Listing 2. CHOICE1.TEXT.

```
0: PROGRAM Choice1;
1:
2:   Uses ChainStuff;
3:
4: BEGIN
5:   writeln;
6:   writeln( 'Add records selection.' );
7:   write( 'Press return ...' );
8:   readln;
9:   SetChain( 'MENU' );
10: END.
```

Listing 3. CHOICE2.TEXT.

```
0: PROGRAM Choice2;
1:
2:   Uses ChainStuff;
3:
4: BEGIN
5:   writeln;
6:   writeln( 'Delete records selection.' );
7:   write( 'Press return ...' );
8:   readln;
9:   SetChain( 'MENU' );
10: END.
```

own alternate `MENU` programs and pass their names as the *ComeFrom* values to `CHOICE1` and `CHOICE2`.) You can also directly run the children as stand-alone orphans.

Memory Swapping

`ChainStuff` has two other procedures for increasing the amount of memory available to your programs. `SwapOn` causes portions of the oper-

ating system to share the same memory and, in the process, releases 2262 bytes for your program to use. But you gain this memory at the expense of slower operation while Pascal exchanges portions of itself from disk. It's hard to predict whether this swapping will go unnoticed or become an annoying disadvantage. Usually, the more file handling in your program, the slower it operates with swapping in effect.

SwapOff turns swapping off, reducing available memory by 2262 bytes. In Apple Pascal versions 1.2 and 1.3, a third procedure, SwapGPOn, releases an additional 800 bytes. (GP refers to Get and Put.) Don't use SwapGPOn if your program has Get and Put statements or reads and writes text files by other means, which Pascal internally translates to the same code Get and Put use. If you ignore this warning, your program will sluggishly read the disk for each

character transfer. In other words, reading an 80-character string with SwapGPOn will take 80 disk reads!

The three swapping procedures, SwapOn, SwapOff, and SwapGPOn, take effect after chaining to another program. They have no effect on the program that uses them. That may seem strange, but swapping requires internal initializing steps that Pascal can take only before running a program. Therefore, it delays turning swapping on or off until you chain

somewhere else. In other words, you can't swap your parents until you first swap your children. (And I can't help but wonder what you think of that sentence if you started reading this column in the middle.)

Segments

Segments are procedures (or functions) that stay on disk until needed. This lets you divide a large program into pieces and load into memory only one or more of its pieces at a time. Because the segments share the same memory, the program occupies less memory than it would if the segment procedures were the regular kind. And, unlike chaining, loading segments takes only a brief moment—a tiny flash of the disk-drive light is the only evidence that the operating system is activating a new segment.

To create a segment routine, add SEGMENT to the front of a procedure or function declaration. For example, this creates a segment named OneSeg:

```
SEGMENT PROCEDURE OneSeg;  
BEGIN
```

```
(* programming for OneSeg *)  
END;
```

When you compile the program containing that segment, Pascal creates the code for loading the procedure from disk every time you call OneSeg in your program. A program usually has many segments that share the same space. Although Pascal automatically organizes these segments, loading the ones it needs and keeping the others on disk, there are a few restrictions.

Segment Restrictions

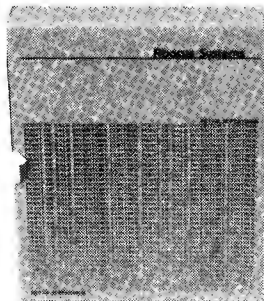
All code files contain a *segment dictionary*, an array of slots containing the pieces that make up a program. To see this array, run LIBRARY from APPLE3; type X or some other dummy output filename, and supply the full name of the program you want to examine. (Try MENU.CODE, for example.) Type A to abort the LIBRARY program. You can use LIBRARY to examine code files because they have the same form as library files such as SYSTEM.LIBRARY. The contents of library and code files differ, of course, but they're physically the same.

If you're following along, you'll see 16 slots numbered zero to 15: These are the segment numbers. The program is segment zero. The first seg-

Retail Management MADE Easy

For years Large Retailers have enjoyed the benefits of computerized Inventory Control.

Now! the **Retail Supervisor** enables you to realize the Time and Cost savings of a fully automated Point-of-Sale and Inventory Control system.



Clear, concise reports allow you to eliminate Overstocks, identify Slow Movers, reduce Stockouts and improve Profit Margins.

The Retail Supervisor will give you control of your Inventory Investment and enhance your ability to make profitable Management Decisions.

The Retail Supervisor will consistently contribute more to your profits than any other Investment you can make. To see how the Retail Supervisor can improve your Bottom Line,

In the United States call
(608) 785-1740 or
(519) 944-6769 in Canada



Abacus Systems™

707 Cass St., La Crosse, WI 54601, (608) 785-1740

The Retail Supervisor is available for the Enhanced Apple IIe and Apple IIc.

Apple is a registered trademark of Apple Computer, Inc. Retail Supervisor, Abacus Systems, and the Abacus Systems Logo, are trademarks of Abacus Inc.

ment procedure is number 1, the next number 2. Because of the segment dictionary's limited size, you can have up to 15 segmented procedures in one program.

Many people mistakenly assume that nesting segments inside others increases the maximum number of segments you can have. But this isn't the case. You can certainly nest segment procedures, but each still takes one slot in the segment dictionary. For example, the following procedure occupies two dictionary slots, even though procedure InSide is visible only from OutSide's body:

```
SEGMENT PROCEDURE OutSide;
  SEGMENT PROCEDURE InSide;
  BEGIN
    (* Inside programming *)
  END;
BEGIN
  (* Outside programming *)
  (* InSide visible here *)
END;
```

Another restriction is that segment procedures must come before any regular procedures and functions. This often poses a problem. How can segmented procedures call the non-segmented ones? As **Listing 5**, SegDemo, shows, it's an easy problem to solve. Just declare regular procedures FORWARD before any segments. Then insert the bodies (minus any parameter lists) of the procedures you earlier declared FORWARD.

SegDemo has two such FORWARD procedures, Pause and GetTwoRandomNumbers. Segments Add and Multiply call these two procedures, whose bodies appear after the segments. The parameter list in GetTwoRandomNumbers appears only in the FORWARD declaration. It doesn't repeat in the actual programming for the procedure at line 41. Similarly, the result type for the Random function appears only in the FORWARD declaration.

When you compile and run SegDemo, press return and watch your disk-drive light. You should see a brief flash when Pascal loads the programming for the Add and Multiply segments.

Segment Abuse

Never put calls to segment procedures inside loops. If you use the statement

```
FOR i := 1 TO 500 DO
  OutSide;
```

in your program, Pascal will load segments InSide and OutSide 500 times

from disk, drastically slowing your program. Generally, you should segment only main program operations. Don't make the common mistake of segmenting everything in sight.

If you must repeatedly call segment procedures, place the compiler Resident option (*\$R <name>*) immediately after BEGIN in the procedure or program block that causes Pascal to load the segment from disk. Pascal temporarily makes resident all segment names following the R. You can also

use a segment number in place of <name>, but the name is handier.

To experiment with resident segments, remove lines 27-29 from procedure Pause in SegDemo (**Listing 5**). Add an integer variable I in the main VAR declaration at line 3. Finally, insert the following FOR loop in place of lines 48-50:

```
FOR I := 1 TO 10 DO
  BEGIN
    Add; Multiply
  END;
```

INTRODUCING

Moneyworks™

A COMPLETE PERSONAL FINANCE PACKAGE

Over 30 financial options

Combined on one simple menu driven disk.

Complicated financial planning and analysis become enjoyable without spending hours studying a lengthy users manual.

Gain control of your financial future now. Planning, organizing, and measuring results are the keys to effective money management.

Just boot and see how Moneyworks for you!

ALL FOR ONLY \$39.95

call to order
1-800-835-2246 ex 161
1-800-262-2421 ex 161 Kansas Residents



or send check or money order to

University Software
6019 Ogden Forest Drive
Houston, Texas 77088

plus \$3.00 shipping and handling
Texas residents add 6.125% sales tax

Including

- Complete loan analyzer package
- Checkbook balancer
- Income statements
- Balance sheets
- Electronic calculator
- Telephone/address list
- Sortable record filer for all financial accounts and transactions including checking, savings, credit cards, stock market, real estate and more
- Memo writer, an easy to use word processor.
- Complete analysis package for savings, annuities and investments (present and future values).

Compatible with Apple II series
Computers and Printers



University
SOFTWARE

Apple II is a registered trademark of Apple Computers Inc. Moneyworks, University Software and the University Software logo are trademarks of University Software, Houston, Texas 77088.

Circle 195 on Reader Service Card.

**This Publication
is available in Microform.**

**University Microfilms
International**

300 North Zeeb Road, Dept. P.R., Ann Arbor, Mi. 48106

**68000 for your Apple
UNDER \$200 !**

**Our line of hardware &
software systems for Apple
II+, IIe includes a 68008
card, assembler, & FORTH
for under \$200 !**

**Write or call today for our
68008/6809 product catalog.**



PO Box 696
Oak View, CA 93022 (805) 649-2833

Circle 67 on Reader Service Card.

The blood of Kings or of Knaves or both.
Family Roots software helps you trace
your bloodlines back through lost genera-
tions and the mists of time.

For your Apple, IBM, Commodore, Kay-
pro, TRS-80,* and many others, Family
Roots offers all kinds of genealogical assis-
tance: Individual and group sheets, charts,
name indices, general search and text

Blood.

capabilities. Adapts
to most disk drives,
printers, and screens.
You get more utility
programs, plus lots
of personal control.
A comprehensive
(new) manual
is included.

All for just \$185.

Write or call today
for more infor-
mation and a
free brochure.

Quinsept, Inc.

P.O. Box 216
Lexington, MA 02173
(617) 641-2930

American Express,
Visa, and MasterCard
gladly accepted.

* Trademarks for Apple
Computer Inc., International
Business Machines, IBM, Inc.,
Digital Research and Tandy Corp.



PASCAL PRIMER

Listing 4. CHAINTO.

```
0: PROCEDURE ChainTo( ProgramName : string );
1: VAR
2:   f : FILE;
3: BEGIN
4:   ProgramName := concat( ProgramName, '.CODE' );
5:   (*$I-*)      (* turn off I/O error checking *)
6:   reset( f, ProgramName );
7:   WHILE ioresult <> 0 DO
8:     BEGIN
9:       writeln;
10:      writeln( 'Put in disk with ', ProgramName );
11:      write( 'Press RETURN to continue...' );
12:      readln; (* wait for RETURN *)
13:      reset( f, ProgramName );
14:    END;
15:    (*$I+*)      (* turn on I/O error checking *)
16:    SetChain( ProgramName );
17:    Write( 'Chaining to ', ProgramName, ' ...' );
18:    exit( program ) (* chain occurs here *)
19:  END;
```

Listing 5. SEGDEMO.TEXT.

```
0: PROGRAM SegDemo;
1:
2: VAR
3:   Seed, a, b : integer;
4:
5: PROCEDURE Pause;
6:   FORWARD;
7:
8: PROCEDURE GetTwoRandomNumbers( VAR x, y : integer );
9:   FORWARD;
10:
11: SEGMENT PROCEDURE Add;
12: BEGIN
13:   GetTwoRandomNumbers( a, b );
14:   writeln( a, ' + ', b, ' = ', a + b );
15:   Pause
16: END; (* Add *)
17:
18: SEGMENT PROCEDURE Multiply;
19: BEGIN
20:   GetTwoRandomNumbers( a, b );
21:   writeln( a, ' x ', b, ' = ', a * b );
22:   Pause
23: END; (* Multiply *)
24:
25: PROCEDURE Pause;
26: BEGIN
27:   writeln;
28:   write( 'Press return...' );
29:   readln
30: END; (* Pause *)
31:
32: FUNCTION Random : integer;
33: CONST
34:   Modulus = 7415;
35:   Increment = 25543;
36: BEGIN
37:   Seed := ( Seed + Increment ) MOD Modulus;
38:   Random := Seed
39: END; (* Random *)
40:
41: PROCEDURE GetTwoRandomNumbers;
42: BEGIN
43:   x := Random;
44:   y := Random
45: END; (* GetTwoRandomNumbers *)
46:
47: BEGIN
48:   Pause;
49:   Add;
50:   Multiply
51: END.
```


When you compile and run Seg-Demo, Pascal loads the Add and Multiply segments from disk ten times, for a total of 20 disk reads. To repair the problem, add this compiler option just after the BEGIN at line 47:

(*\$R Add, Multiply*)

That makes Add and Multiply resident throughout the body of the main program, which again runs at top speed. Of course, this also removes the advantage of segmenting the procedures. With the R option in effect, Add and Multiply are resident all of the time. But usually, you'll use this option only in some procedures that call various segments—not in the main program body, as in this demonstration.

Pascal News

P-Tral, from Woodchuck Industries (340 West 17th Street, #2B, New York, NY 10011, 212-924-0576), helps you convert Applesoft BASIC programs to Pascal. My tests indicate that P-Tral does a good job, but not a perfect one. Don't expect to run your Applesoft collection through P-Tral and immediately run all your programs in Pascal. But if you have BASIC programs to convert to Pascal, P-Tral is a great way to get a head start on the job. (See *inCider's* review, February 1986, p. 63.)

If you object to a columnist's self-advertising, don't read this paragraph. But if you want information about Tom Swan's Apple Pascal Toolkit, Volume 1, send a note to the address at the end of the column. The ideas for some of the tools came from letters and comments many of you kindly sent.

And Finally...

Next time, I'll explain how you can write your own units, just like the TurtleGraphics and ChainStuff units that come with Apple Pascal. Units let you precompile your best routines and store them in SYSTEM.LIBRARY, where they're available to all your programs. Along with chaining and segments, units are professional tools for fitting large programs into small computers. ■

Tom Swan is the author of several books including Pascal Programs for Data Base Management and Mastering Turbo Pascal. Address correspondence to Tom at Swan Software, P.O. Box 206, Lititz, PA 17543. Please enclose a self-addressed, stamped envelope if you want a personal reply.



CHART LETTER DRAW SHOW

Construct bar, line, pie, scatter, XY, and area charts or any combination of the charts shown.

Add titles, labels and other lettering in 40 fonts and many sizes and colors.

Create custom drawings. Modify your drawings or drawings of others. Move things around and transfer, merge or reduce picture sections. "Paint" in over 100 colors.

Present a "slide show" of up to 32 pictures on monitor or TV screen. Subtitle pictures. Select "slides" manually or automatically in a pre-timed presentation.



*It's almost like having
your own graphic artist!*
**Try the new, improved and
more complete GRAPHICS
DEPARTMENT™**

Available for Apple Computers for \$124.95.



**Sensible
Software®, Inc.**

210 S. Woodward,
Suite 229,
Birmingham, MI 48011
(313) 258-5566

Apple is a trademark of Apple Computer, Inc.

Circle 242 on Reader Service Card.

Attention all FX80, FX100, JX, RX, & MX owners:
**You already own half of
a great printer**

Dealer
inquiries
welcome



**Now
Only
\$79.95**

Now for \$79.95 you can own the rest. You see, today's new dot matrix printers offer a lot more.

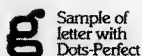
Like an NLQ mode that makes their letters print almost as sharp as a daisy wheel. And font switching at the touch of a button in over 160 styles. But now, a Dots-Perfect

upgrade kit will make your printer work like the new models in minutes— at a fraction of their cost.

And FX, JX and MX models will print the IBM character set, too.

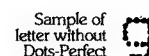
So, call now and use your Visa, MasterCard, or AmerEx. Don't replace your printer, upgrade it!

1-800-368-7737
In California: 1-800-831-9772



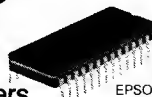
Sample of
letter with
Dots-Perfect

Dots-Perfect™
Dresselhaus



Sample of
letter without
Dots-Perfect

837 E. Alosta Ave., Glendora, CA 91740 Tel: (818) 914-5831
An upgrade kit for EPSON FX, JX, RX, & MX printers



EPSON is a trademark of
EPSON America, Inc.

Circle 275 on Reader Service Card.

Continued from p. 45.

change preset sounds from the instrument during track recording—beginning with a flute and ending with a trumpet sound, for instance. When you play back a piece, the various instruments will chime in at the appropriate times.

MUSE can also keep track of information about MIDI keyboards' modulation wheel settings, or filter out the information if desired (my Casio doesn't support this feature). Furthermore, you can control the flow of MIDI data from the instrument you're playing; the default setting passes all information to the computer, but you can turn this off if you don't want to hear a second attached synthesizer while programming a sound on the master keyboard.

The program lets you set three synchronization modes: internal, MIDI sync, and tape. Internal sync is the default mode that determines the tempo for recording and playback.

MIDI synchronization requires a separate device that generates MIDI clock signals, such as another MPU-401, a Roland MSQ-700, or any sequencer or drum machine; tape sync lets you use an MPU-401 clock signal recorded on tape.

If you want to play back part of your song repeatedly, MUSE will let you set a loop for either a single track or the whole song. For multi-track recording, you can merge two tracks, copy individual tracks, chain them end-to-end, edit individual measures of chained tracks, or transpose tracks up or down the scale. If MUSE's myriad options get too overwhelming, you can clear the computer's memory and start all over.

Take It from the Top

What doesn't the MIDI Users Sequencer/Editor do? For one thing, it doesn't have a print feature, so you can't transcribe your scores to sheet music. For another, you don't actually see the staff and your notes on

screen; the program is audio-oriented, not visual. Also, MUSE can't act as a sound editor; that is, it can't program your synthesizer to create new sound patches.

However, the program and accompanying hardware offer a great deal of flexibility and power for the Apple owner who wants to record and fine-tune his or her own multi-voiced music. The newcomer to MIDI can easily get up and running with Roland's package, while the expert will find readily understandable and controllable advanced features. Overall, I'd recommend MUSE for the intermediate to advanced user.

Roland supports its product with free telephone assistance; a Roland user-group magazine offers tips on getting the most from its MIDI equipment. ■

Margaret Morabito
Rindge, NH

SCRG SOUTHERN CALIFORNIA RESEARCH GROUP

quikLoader

The quikLoader™ provides absolute security of programs. The program can be put onto an EPROM chip, plugged into the quikLoader, and the quikLoader plugged into any slot of the APPLE][,][+, or //e. The program cannot be misplaced, and it will load when needed.

Any program that can be loaded as files can be stored on the quikLoader with the aid of an EPROM programmer board (such as the PROMGRAMMER™), and our new PROGRAMMERS AID program. Up to 512K of programs can be stored on each quikLoader. Access to these programs can be as easy as turning on the computer.

An example of a practical application is APPLEWORKS™. We can transfer your copy of APPLEWORKS for an additional \$89.50, and the program will be up and running within 2 seconds after turning on the computer. There is no need to use either the startup or program disks.

The quikLoader provides many other benefits. As soon as power is applied, DOS loads automatically from the card. Included with the quikLoader are the popular programs FID and COPYA. These programs, as well as any that you add, will show on the catalog screen. The program is selected with a single keypress.

Installation is easy, just plug it into any peripheral slot. It will work on a APPLE][,][+, or //e.

\$179.50

DOS 3.3, Integer, FID, and COPYA are copyrighted programs of APPLE COMPUTER INC., and are licensed to Southern California Research Group for distribution only with quikLoader.

APPLE and APPLEWORKS are trademarks of APPLE COMPUTER INC. quikLoader (designed by Jim Sather) is a trademark of S.C.R.G.

PROMGRAMMER™

Designed by Bob Brice

Software by Bob Sander-Cederhof

The PROMGRAMMER is an inexpensive EPROM programmer for the APPLE][,][+, and //e computers. The unit plugs into any slot of the computer, and allows programming any standard 5 volt, 27 series EPROM. The ZIF socket allows rapid programming, copying, duplication, or modification of EPROMs.

\$149.50

SLOT 3 CLOCK™

The SLOT 3 CLOCK is designed to plug into slot 3 of the //e without interfering with auxiliary memory. PRODOS™ is fully supported, and the card is APPLESOFT™ compatible. Installation software and long-life lithium battery are included. designed by Chuck Shaffer

\$79.50

SWITCH-A-SLOT

The SWITCH-A-SLOT is an expansion chassis, which allows the user to plug in up to four peripheral cards in one slot. One of these cards is selected for use, and only that card draws power.

\$179.50

SWITCH-A-SLOT and EXTEND-A-SLOT work well with most slow to medium speed cards. They are not recommended for high speed data transfer devices.

EXTEND-A-SLOT

The EXTEND-A-SLOT brings a slot outside your APPLE™, allowing an easy change of cards.

\$34.95

9-16 Adapter for APPLE //e & //c

This permits the use of most 16-pin I/O devices with the APPLE //e or //c. The only limitations are those devices that use the annunciators or the \$C040 strobe. NOTE: The //c does not support the use of two joysticks.

\$14.95

16-9 Adapter for APPLE][and][+

With this adapter, owners of early APPLES can take advantage of the newer 9-pin game products, such as joysticks, MUPPET LEARNING KEYS™, etc.

\$14.95

BOOKS BY JIM SATHER

Understanding the APPLE][- The definitive source of information about how the APPLE][works. Forward by Steve Wozniak.

\$22.95

Understanding the APPLE //e - This companion volume covers the additional information needed to know details of the computer hardware.


\$24.95

Paddle-Adapple

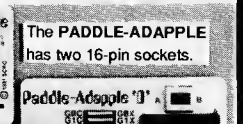
The PADDLE-ADAPPLE game expansion adapter plugs into the 16-pin interior game I/O socket, and allows you to select between one of two devices, or use two joysticks for games such as ARCHON™ and ONE-ON-ONE™.

\$29.95

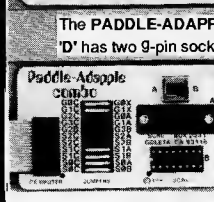
There are three versions to adapt to any combination of the newer type APPLE connector (the 9-pin D sub-miniature), or the older 16-pin plug.



The PADDLE-ADAPPLE has two 16-pin sockets.



The PADDLE-ADAPPLE 'D' has two 9-pin sockets.



The PADDLE-ADAPPLE COMBO has one 16-pin socket and one 'D' sub-miniature connector.

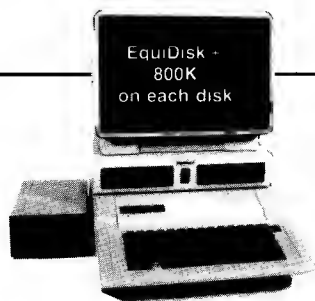
SIX MONTH WARRANTY TEN DAY TRIAL TOLL-FREE ORDER LINES

From California (800) 821-0774
Rest of U.S. (800) 635-8310
Outside of U.S. or for information, call (805) 529-2082
SHIPPING CHARGES: U.S. & Canada - \$2.50
Other countries: SWITCH-A-SLOT \$10 surface, \$25 air.
Other items: \$5 surface, \$10 air.

at your local dealer or direct from:
**SOUTHERN CALIFORNIA
RESEARCH GROUP**

Post Office Box 593-R Moorpark, CA 93020
Telex 658340-SCRG (Intelnet SNC)

VISA, MASTERCARD ACCEPTED



EquiDisk+™

We've got a lot in store for you!

The EquiDisk+ is the next generation in 5¼" floppy disk storage — and it's here today! Unlike your old Apple drives that were probably too small for any real work, the EquiDisk+ dual drive system gives you over 1.6 megabytes of immediately accessible on-line storage. Now you can store over 8 megabytes of data with that box of diskettes sitting on your shelf. That's over 3500 double-spaced pages, or 70,000 names and addresses, or complete payroll information for more than 4000 employees. And with that second box of diskettes on your shelf you can back it all up — 800K on each disk.

More than just Storage!

- + The EquiDisk+ works with DOS 3.3, ProDOS and CP/M.
- + Standard 5¼" diskettes are all you need.
- + The entire unit fits neatly between your monitor and computer console.

Apple, Apple Logo, DOS 3.3, ProDOS and AppleWorks are registered trademarks of Apple Computer, Inc. CP/M is a registered trademark of Digital Research, Inc. Franklin Ace is a trademark of Franklin Computer Corp.

- + Each EquiDisk+ comes with a surge suppressor, three built-in AC outlets on the back and a front-mounted power switch. You can turn everything on and off at the same time.
- + CP/M users can access software formatted for other computers. Using one of the commercially available "transfer" programs, this feature allows you to access any CP/M software and run it on your Apple.
- + Works with the Franklin Ace 2000 series.

More for Everyone!

- + AppleWorks — now your data disk will hold 800K . . . checkbook records for 5 years; every term paper or book report you've ever done; every recipe in your kitchen and the Christmas mailing list . . . on one diskette.
- + Programmers — all of your assemblers, linkers, compilers, editors and debuggers, as well as your source code . . . on one diskette.

CP/M cards supported; Microsoft Softcard (56K and 60K Versions); ALS Z-Engine; PCPI (Starcad and Appli-Card)

- + Business — months of payroll, accounts receivable and payable, general ledger and daily correspondence . . . on one diskette.
- + Educators — consolidate all of your skill drills and tutorials, with room for individual work . . . on one diskette.



Factory-Direct Price
\$499⁰⁰

Includes dual drives, case, cables, controller card, manual and software. 1 year limited warranty



Minimum system configuration:

*Apple II+ or IIe with 64K RAM
*One standard Apple or equivalent drive

To order call toll-free
1-800-854-0561 ext. 825
(24 hours/7 days)

H&M Disk Drives

1101 E. Pacifico
Anaheim, CA 92805
(714) 385-1146

15 day Money-back Guarantee

Circle 254 on Reader Service Card.

The best AppleWorks-Compatible spelling checker just got better! Introducing the improved... **Sensible Speller™**

The new ProDOS Sensible Speller supports the Apple II Memory Expansion Card and is now supplied on the UniDisk 3.5, as well as on the 5¼" disk. Its huge vocabulary—80,000 words in all—is derived from the official Random House Dictionary®.

Used in conjunction with a memory expansion card, the improved Sensible Speller runs up to three times faster than before. You can also load everything—program and dictionaries—on to a hard disk drive.

However, Sensible Speller is still just as easy to use. It shows you misspellings in context, suggests the correct spelling, and allows immediate replacement of misspelled words with correct ones.

Chances are you are already equipped to use Sensible Speller because it works with AppleWorks and virtually all other Apple word processors.* It runs on all Apple II, IIe and II+ computers and is available at your dealer for \$125.

Black's Law Dictionary™, Sensible Technical Dictionary™ and Stedman's Medical Dictionary™ are available separately on diskette for use with the Sensible Speller. Each is \$39.95. A new utility now allows you to merge the dictionaries together.

*Sensible Speller ProDOS works with the following word processors: AppleWorks, AppleWriter-ProDOS version (Apple Computer, Inc.), Format II, Enhanced-ProDOS (Kensington Microware), Mouse Write-text files (Roger Wagner Publishing), MouseWord (International Solutions), PFS WRITE-ProDOS (Software Publishing, Inc.), Word-Talk (Computer Aids) and WordPerfect (SSI Software), Word Juggler (Quark Inc.), Writing Wizard (Scarborough Systems), Zidax-ProDOS (Computer Solutions), and others. Owners of trademarks indicated in parentheses: Black's Law Dictionary (West Publishing, Inc.), Stedman's Medical Dictionary (Waverly Press, Inc.)



Sensible Software, Inc.

210 S. Woodward, Suite 229, Birmingham, MI 48011
(313) 258-5566



COMPATIBLE WITH:

- Memory Expansion Cards
- UniDisk 3.5 & 5¼" Drives
- Hard Disk Drives
- AppleWorks and Most ProDOS Word Processors
- Catalyst

Productivity Trio

THE HANDLERS

Advanced Logic Systems, 1283
Reamwood Avenue, Sunnyvale, CA 94089

File manager, word processor, and spelling checker; 48K Apple II, II Plus, IIe, IIc,
DOS 3.3
\$99.95

	List Handler	Word Handler	Spell Handler
Ease of learning	■ ■ ■	■ ■ ■	■ ■ ■
Ease of use	■ ■	■ ■ ■	■ ■ ■
Documentation	■ ■ ■	■ ■ ■	■ ■
Support	■ ■ ■	■ ■ ■	■ ■ ■
Overall	■ ■	■ ■	■ ■

The old saying "You get what you pay for" usually rings true for software. Not so—at least, not entirely so—for the Handlers. Advanced Logic Systems' list manager, word processor, and spelling checker are surprisingly powerful and easy to use, not to mention inexpensive at \$99.95 for all three. That doesn't mean I'd choose them over AppleWorks, but they do

have some worthwhile capabilities.

List Handler, while not a super-powered data base, makes up for it with impressive capacity—allowing some 3000 records on a single floppy, and sorting them in a scant 45 seconds. Each record can hold up to 255 fields, each field up to 200 characters, and the program can use up to eight disk drives.

Unlike some programs that can take hours to learn, List Handler is easily mastered, with clear, concise documentation and tutorial exercises. Getting started is fairly straightforward—boot the List Utility side of the program disk and the main menu will appear; select "Create a New List" and you're ready to key in the field names.

You can change the field names later if you choose, but if you want to add a new one, it will be entered at the end of your list. For example, if your original list consists of name, address, and telephone number, you won't be able to add a company name before the address later.

Once the field names are decided, you write them to a list disk (a blank disk formatted automatically). Each set of names requires its own list disk, so creating a new list destroys any earlier one on that disk.

After that, you remove the list disk and reboot the system with the List Handler disk (the flip side of List Utility). This main program uses mnemonic control-key commands (the delete key, in a minor inconvenience, is nonfunctional in all Handlers programs). Helpful prompts at the bottom of the screen guide confused users.

From the main menu, you can add or find records, print labels or letters, or print or mount list disks (you must mount or log on a list disk before beginning data entry or maintenance). Select "Add Records" and your fields appear on screen—only five at a time, a minor hassle. Data entry is simple and quick. The only trick is to return to the main menu when you exit so that the data won't be lost.

Finding and editing records is easy, too, though List Handler can't scroll

Why do some mail order houses engage in negative advertising against RamWorks® and other Applied Engineering products?

It began after we told them we didn't want them as a dealer. Applied Engineering doesn't accept just anyone as a dealer and in a few cases, for some very good reasons, we just have to say no.

Most dealers sell both Applied Engineering products and others. These dealers don't practice "knock the competition". You'll notice that it's only the dealers that can't carry our products that are engaging in this practice. In fact, these dealers usually carry products from manufacturers that make cash payments direct to the salesman when they sell their product.

We know that most people are turned off by this approach, but if you are ever tempted by imitations of our products that claim to be compatible, give us a call. Whether you're concerned about performance, compatibility, service, or price, you'll discover why we outsell all the rest.



APPLIED ENGINEERING™

214-241-6060

30%
SAVINGS
off cover price

30%
SAVINGS

A one year subscription (12 monthly issues) at the low, rate of \$24.97! Save over \$10.00 off the newsstand rate.

Apple is a registered trademark of Apple Computer, Inc.

YES! I want a one year subscription (12 issues) for only \$24.97.

inCider

☐ Send me 12 issues of **inCider** for \$24.97. I save 30% off the cover price.

☐ 24 issues for \$38.00. Save 46% off the cover price.

☐ Payment enclosed ☐ Bill me
Please make checks payable to **inCider**.

Name _____

Address _____

City _____ State _____ Zip _____

Canada & Mexico \$27.97, 1 year only, US funds drawn on US banks.
Foreign Surface \$44.97, 1 year only, US funds drawn on US banks.
Foreign Airmail, please inquire. Please allow 6-8 weeks for delivery.

36NB5F

inCider—The Apple II Journal—
the best in software and hardware reviews, entertainment, education and answers to your most pressing questions.

30%
SAVINGS



YES! I want a one year subscription (12 issues) for only \$24.97.

inCider

☐ Send me 12 issues of **inCider** for \$24.97. I save 30% off the cover price.

☐ 24 issues for \$38.00. Save 46% off the cover price.

☐ Payment enclosed ☐ Bill me
Please make checks payable to **inCider**.

Name _____

Address _____

City _____ State _____ Zip _____

Canada & Mexico \$27.97, 1 year only, US funds drawn on US banks.
Foreign Surface \$44.97, 1 year only, US funds drawn on US banks.
Foreign Airmail, please inquire. Please allow 6-8 weeks for delivery.

36NB5F

UNCONDITIONAL GUARANTEE

If **inCider** doesn't prove to be everything we say it is, just tell us. We'll refund your money for all undelivered issues—no questions.

30%
SAVINGS

Add to your computing skills with monthly features like:

- Off-the-shelf solutions to your computing needs.
- Reader interaction for more user-friendly information.
- An ongoing course on Applesoft Basic language.
- Special articles to increase your personal productivity.
- Ready to run program listings.

YES! I want a one year subscription (12 issues) for only \$24.97.

inCider

☐ Send me 12 issues of **inCider** for \$24.97. I save 30% off the cover price.

☐ 24 issues for \$38.00. Save 46% off the cover price.

☐ Payment enclosed ☐ Bill me
Please make checks payable to **inCider**.

Name _____

Address _____

City _____ State _____ Zip _____

Canada & Mexico \$27.97, 1 year only, US funds drawn on US banks.
Foreign Surface \$44.97, 1 year only, US funds drawn on US banks.
Foreign Airmail, please inquire. Please allow 6-8 weeks for delivery.

36NB5F

BUSINESS REPLY MAIL

First Class Permit No. 73 Peterborough, NH 03458

POSTAGE WILL BE PAID BY ADDRESSEE

CW Communications/Peterborough
inCider
PO Box 911
Farmingdale, NY 11737

**NO POSTAGE
NECESSARY
IF MAILED
IN THE
UNITED STATES**



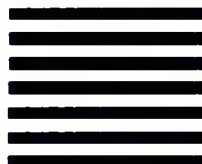
BUSINESS REPLY MAIL

First Class Permit No. 73 Peterborough, NH 03458

POSTAGE WILL BE PAID BY ADDRESSEE

CW Communications/Peterborough
inCider
PO Box 911
Farmingdale, NY 11737

NO POSTAGE
NECESSARY
IF MAILED
IN THE
UNITED STATES



BUSINESS REPLY MAIL

First Class Permit No. 73 Peterborough, NH 03458

POSTAGE WILL BE PAID BY ADDRESSEE

CW Communications/Peterborough
inCider
PO Box 911
Farmingdale, NY 11737

NO POSTAGE
NECESSARY
IF MAILED
IN THE
UNITED STATES



**30%
SAVINGS**
off cover price

A one year subscription (12 monthly issues) at the low, rate of \$24.97! Save over \$10.00 off the newsstand rate.

inCider—The Apple II Journal—
the best in software and hardware
reviews, entertainment, education
and answers to your most pressing
questions.



UNCONDITIONAL GUARANTEE

If inCider doesn't prove to be everything we say it is, just tell us. We'll refund your money for all undelivered issues—no questions.

**Add to your computing skills
with monthly features like:**

- Off-the-shelf solutions to your computing needs.
- Reader interaction for more user-friendly information.
- An ongoing course on Applesoft Basic language.
- Special articles to increase your personal productivity.
- Ready to run program listings.

back through selected records. The return key moves forward through records matching your search criteria, but you must run the search again to review previous matches.

There are editing inconveniences (although the well-written manual points them out so that you don't discover them by accident). If you change a misspelled word within a field entry, the entire line of data is erased and must be keyed in again—particularly annoying if you've just written a 200-character comment. Also, any changed record is automatically moved to the end of the file. This could prove a nuisance if you inserted records in a certain order.

Not to dwell on the negative, but List Handler lacks a counter; you never know how many records you've entered or labels you've printed unless you count them yourself. I often charge list-maintenance clients by number of entries or printed labels, and I find a counter invaluable.

List Handler offers three printing options: form letters, labels, and lists.

Mail merge runs without a hitch with Word Handler or any other DOS 3.3 word-processing document of up to two pages. For quick convenience, List Handler also provides up to 15 lines for entering a short document (well, a postcard) directly.

To print, you specify a range (such as everyone living in zip codes 70000–80000 or all the Smiths in Cleveland), then, if you want, a particular printout order (numerical, alphabetical, or chronological). On the next screen, the input document, you design the layout of your document. For example, if printing a label, you would select the fields to be used in setting up an address block. List Handler tends to chop off characters unless enough spaces to accommodate your longest entry are set up beforehand; leave plenty of space on each line or Fort Lauderdale will end up as a truncated Fort Laud.

The last pre-printing step is simple housekeeping: setting up paper width, page length, margins, and so on. The program is unforgiving here; if you

change your mind while selecting printing options, you can't go back through previous screens to review or alter your choices. As with search subsets, you must return to the main menu and start over.

All Right to Write

Word Handler is to word processors as List Handler is to data bases—an adequate performer, if no match for other, costlier programs on the market.

Like List Handler, it's a treat for those who don't want to get buried in a burdensome user's manual, with a helpful tutorial and mnemonic control-key commands (or open-apple commands for //e and //c users)—control-D instead of the delete key, for example, to delete characters. The program disk has two sides, one containing 40- and 66-column formats and the other the 80-column format. Unlike List Handler, Word Handler requires you to initialize your data disks instead of doing it automatically.

The title screen enables you to run Word Handler, select the interface

We Make Measurement And Control Easy!

12 BIT, 16 CHANNEL, PROGRAMMABLE GAIN A/D

- All new 1984 design incorporates the latest in state-of-art I.C. technologies.
- Complete 12 bit A/D converter, with an accuracy of 0.02%!
- 16 single ended channels (single ended means that your signals are measured against the Apple's GND), or 8 differential channels. Most all the signals you will measure are single ended.
- 9 software programmable full scale ranges, any of the 16 channels can have any range at any time. Under program control, you can select any of the following ranges: ± 10 volts, $\pm 5V$, $\pm 2.5V$, $\pm 1.0V$, $\pm 500mV$, $\pm 250mV$, $\pm 100mV$, $\pm 50mV$, or $\pm 25mV$.
- Very fast conversion (25 micro seconds).
- Analog input resistance greater than 1,000,000 ohms.
- Laser-trimmed scaling resistors.
- Low power consumption through the use of CMOS devices.
- The user connector has +12 and -12 volts on it so you can power your sensors.
- Only elementary programming is required to use the A/D.
- The entire system is on one standard size plug in card that fits neatly inside the Apple.
- System includes sample programs on disk.

PRICE \$319

A few applications may include the monitoring of ● flow ● temperature ● humidity ● wind speed ● wind direction ● light intensity ● pressure ● RPM ● soil moisture and many more.

A/D & D/A

A/D & D/A Features:

- Single PC card
- 8 channels A/D
- 8 channels D/A
- Superfast conversion time
- Very easy programming
- Many analog ranges
- Manual contains sample applications

A/D SPECIFICATIONS

- 0.3% accuracy
- On-board memory
- Fast conversion (.078 MS per channel)
- A/D process totally transparent to Apple (looks like memory)
- User programmable input ranges are 0 to 10 volts, 0 to 5, -5 to +5, -2.5 to +2.5, -5 to 0, -10 to 0.

The A/D process takes place on a continuous, channel sequencing basis. Data is automatically transferred to its proper location in the on-board RAM. No A/D converter could be easier to use.

D/A SPECIFICATIONS

- 0.3% accuracy
 - On-board memory
 - On-board output buffer amps can drive 5 MA
 - D/A process is totally transparent to the Apple (just poke the data)
 - Fast conversion (.003 MS per channel)
 - User programmable output ranges are 0 to 5 volts and 0 to 10 volts
- The D/A section contains 8 digital to analog converters, with output buffer amplifiers and all interface logic on a single card. On-card latches are provided for each of the eight D/A converters. No D/A converter could be easier to use. The on-board amplifiers are laser-trimmed during manufacture, thereby eliminating any requirement for off-set nulling.

PRICE \$199

SIGNAL CONDITIONER

Our 8 channel signal conditioner is designed for use with both our A/D converters. This board incorporates 8 F.E.T. op-amps, which allow almost any gain or offset. For example, an input signal that varies from 2.00 to 2.15 volts or a signal that varies from 0 to 50 mV can easily be converted to 0-10V output for the A/D.

The signal conditioner's outputs are on a high quality 16 pin gold I.C. socket that matches the one on the A/D's so a simple ribbon cable connects the two. The signal conditioner can be powered by your Apple or from an external supply.

FEATURES

- 4.5" square for standard card cage and 4 mounting holes for standard mounting. The signal conditioner does not plug into the Apple, it can be located up to 1/2 mile away from the A/D.
- 22 pin .156 spacing edge card input connector (extra connectors are easily available i.e. Radio Shack).
- Large bread board area.
- Full detailed schematic included.

PRICE \$79

I/O 32

- Provides 4, 8-Bit programmable I/O Ports
- Any of the 4 ports can be programmed as an input or an output port
- All I/O lines are TTL (0-5 volt) compatible
- Your inputs can be anything from high speed logic to simple switches
- Programming is made very easy by powerful on-board firmware
- The I/O 32 is your best choice for any control application

The I/O manual includes many programs for inputs and outputs.

Some applications include:

Burglar alarm, direction sensing, use with relays to turn on lights, sound buzzers, start motors, control tape recorders and printers, use with digital joystick.

PRICE \$89

Please see our other full page ad in this magazine for information on Applied Engineering's Timemaster Clock Card and other products for the Apple. Our boards are far superior to most of the consumer electronics made today. All I.C.'s are in high quality sockets with mil-spec. components used throughout. P.C. boards are glass-epoxy with gold contacts. Made in America to be the best in the world. All products compatible with Apple II and //e.

Applied Engineering's products are fully tested with complete documentation and available for immediate delivery. All products are guaranteed with a no hassle three year warranty.

Texas Residents Add 5% Sales Tax
Add \$10.00 If Outside U.S.A.

Send Check or Money Order to:
APPLIED ENGINEERING
P.O. Box 798
Carrollton, TX 75006

Call (214)241-6060
9 a.m. to 11 p.m. 7 days a week
MasterCard, Visa & C.O.D. Welcome
No extra charge for credit cards

and printer, convert Word Handler documents to DOS 3.3 text files, or quit. Pick "Run Word Handler" and you enter an "idle mode," the only point where you can exit safely without losing data and your cue to insert or remove your data disk. Although it's mentioned in the manual in several places, there are no on-screen prompts to warn you against writing to your program disk.

Performance-wise, Word Handler is pretty similar to most word processors. It offers word wrap, justification, search, replace, move, and copy functions, and can underline, bold-face, and superscript text. On the other hand, its insert mode is the most unusual feature I found in the entire Handlers package. When you press control-I to insert text, everything after the cursor temporarily disappears from the screen. After typing the new material, pressing the right arrow brings back the old text and returns you to edit mode. I found this most distracting and difficult to use.

The control-F command lets you format text for printing or use Word

Handler's built-in defaults. Printing is accomplished by returning to the idle mode (control-E is save and exit), selecting the print option, and entering the document name and number of pages to be printed. Word Handler can also print multiple copies of different pages.

A Straightforward Speller

For those of you who never made it to the finals of your school spelling bee, Spell Handler might be able to help. It contains a 2750-word RAM dictionary for computers with less than 128K, and a 90,000-word, disk-based dictionary for Apples with 128K or more. The main menu also lets you use a custom dictionary (created by typing a long sentence of your chosen words), set the default drive for documents to check, or get an index of documents on your data disk.

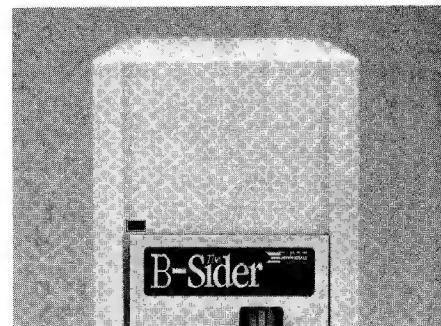
When you check a document, Spell Handler will underline the last character of any word it finds misspelled. The manual says Spell Handler will create an alphabetical list of mis-

spelled words at the beginning of your document, although I was able to see the list on screen only while still in Spell Handler, not from the word processor. After you select your dictionary and name your drive and document (be sure your data disk is inserted at this point; there are no handy reminders), the screen displays the number of words read and the number of misspelled words and lists them alphabetically on the screen.

You may then exit to the main menu, reboot Word Handler, call up your document, and fix your errors. It's no match for a spelling checker built into a word processor, but it's quick and simple.

Overall, the Handlers deliver fair value for a low price. Though not power users' dream programs, they're simple to learn and easy to get started, an advantage to consider when purchasing software. ■

Diane Morgan
Hopkinton, NH



Back Up the Sider

B-SIDER

First Class Peripherals, 3579 Highway 50 East, Carson City, NV 89701

Streaming tape drive for Sider or Sider II hard-disk backup; Apple II, II Plus, //e \$695

Ease of setup	■
Ease of use	■■■■■
Documentation	■
Support	■■■■■
Overall	■■■

If you're the proud owner of a Sider (10-megabyte) or Sider II (20-megabyte) hard disk, you've probably questioned the wisdom of your purchase every time you've backed up the hard drive onto floppy disks (you do believe in backups, don't you?). The process is especially dull if you have an early Sider with its DOS 3.3 Backup/Restore program, requiring you to confirm (with a Y and return)

do you exhibit a tendency to
make punctuation errors?
Regardless of your skill,
typographical errors occur.
Therefore Sensible Grammar

SENSIBLE GRAMMAR™

Yes, just like your old English teacher, your Apple Computer now checks your papers for grammatical and many other writing errors. Don't be embarrassed or lose credibility because of simple typos and mistakes. And it's so easy and fast to do. **Sensible Grammar** features a Macintosh-style user interface, is compatible with the AppleMouse and also has a complete set of keyboard commands.

SENSIBLE GRAMMAR

checks your grammar, capitalization, punctuation and abbreviations. It searches out phrases that are inconcise, vague, wordy or repetitive, as well as phrases that are faulty, informal, pompous or sexist. It calls your attention to clichés and slang. It even allows you to enter your own personal title and pet expressions and then lets you know every time you use them.

It Never Overrides Your Judgment

Sensible Grammar singles out possible mistakes or improper usage and suggests a correct replacement word or phrase, but it always leaves you the option to accept or reject the suggestion.

Sensible Grammar™ for your Apple® 128K //e and //c computer is available for \$99.95.

AppleWorks Compatible!

*Sensible Grammar works with the following word processors: AppleWorks, AppleWriter-ProDOS version (Apple Computer, Inc.), Format It Enhanced ProDOS (Kensington Microware), MouseWrite text files (Roger Wagner Products), MouseWord (International Solutions), PFS:WRITE ProDOS (Software Publishing, Inc.), Word Juggler (Quark, Inc.), WordPerfect (SSI Software), Zardax ProDOS (Computer Solutions) and others.
Owners of trademarks indicated in parentheses.

Sensible Software, Inc.

210 S. Woodward, Suite 229, Birmingham, MI 48011 • (313) 258-5566

each file you want to back up; for 10 megabytes, the task will take more than 70 disks, not to mention more than two hours of your time.

With First Class Peripherals' B-Sider tape unit, this agonizingly long, boring chore becomes quick and easy. Instead of hours, you'll need only nine minutes to back up 10 megabytes of data, and you don't even have to hang around to watch. Once you start the back-up operation, it proceeds automatically with no further user interaction.

Zero Defects, Almost

First Class claims its products are defect-free because each one is tested before going out the door. That may be the case, but apparently the shipping boxes could be stronger; both my hard disk and the tape unit arrived with problems that FCP attributed to shipping damage.

While my Sider's problem is minor—an LED that doesn't always light when it should—the first B-Sider I ordered was dead on arrival. Unfortunately, the poor manual that accompanied the tape drive contributed to my not knowing about the unit's condition for almost a full day.

Once I received a working B-Sider, I found a minor inconvenience: The unit has no power-on indicator. The only way to determine whether the tape drive is switched on is to check the rear of the case to see whether it's getting warm.

A Mediocre Manual

The B-Sider's documentation needs a lot of work. It consists of a loose-leaf binder with two major sections, one for the Sider and one for the B-Sider. The former is fairly complete, but the B-Sider section isn't. For example, the tape drive comes with a ROM chip that's obviously meant to be plugged into the Sider interface card. Nowhere do the installation instructions mention where the chip belongs or how you're to install it; only when I phoned the manufacturer did I learn that a very short section on ROM installation is buried in the "Technical Addenda" in the back of the manual.

Another shortcoming involved the software that accompanied the tape drive, including an excellent Backup/Restore program written in Pascal. The problem here is that all program directions are geared to the first-time user and assume that the hard disk is empty (which makes installation sim-

ple and straightforward). However, many potential B-Sider buyers already own a Sider with a significant amount of data on it, which they'd rather not save to floppies and restore again. It turns out that's not necessary, as a quick call to the toll-free support line resulted in excellent instructions for getting started without losing existing data. That simple explanation, however, should be in the manual.

Besides the manuals, some of the B-Sider programs could be designed better. For example, with the original tape unit, my attempt to prewind a cassette (recommended for all new data tapes) generated an "Error 130" message; nowhere in either manual is there a list of error codes and their meanings. In addition, when I tried to format a blank tape, the program refused to proceed, but also refused to alert me that a possible problem existed.

The Bright Side

Although this review may seem overly negative so far, that gives a false impression: The B-Sider is a su-

perb accessory and an absolute must for every Sider or Sider II owner. While my initial problems were very annoying, the system performed flawlessly once I got it set up and working.

The First Class Peripherals support people to whom I talked were courteous, knowledgeable, and quick to respond. Best of all, their help is free thanks to the firm's nationwide toll-free hotline.

While most computer-related warranties today disclaim everything, it's refreshing to see a simple, straightforward one-year warranty like the B-Sider's. In another radical departure from industry practice, First Class will ship you a B-Sider and let you use it for 15 days; if you're not happy after the trial, return the unit and it will have cost you nothing.

This kind of attitude makes me overlook the frustrations of a unit that arrived DOA and a manual that's sorely lacking in content. First Class Peripherals, you're first class, and I'm happy to recommend this product. ■

*Jules H. Gilder
Brooklyn, NY*

PRINT-QUICK™



5 essential printer support utilities in one easy-to-use product

QUICK-SETUP: Easily control ALL printer features including International Characters, Page Length, Skip-Over-Perf, Left Margin, and Horizontal Tabs. Download and select supplied Customer Character Sets. Save frequently used setups to EXECable Setup Files.

QUICK-TYPER: A full featured one-line-at-a-time text editor that can imbed print feature commands within a line. Text may be sent right to the printer or to a standard text file. Wonderful for labels and quick memos! Unique Preview Line feature makes learning the fanciest printing techniques easy!

QUICK-DUMPER: Simply the best and the easiest-to-use Hi-Res screen printer around! Use the Quick'N'Easy Mode for one button screen printing or go into Total Control to select your own print parameters. Print all or just part of the Hi-Res screen with super easy keyboard, joystick or mouse cropping. Quick-Dumper always tells you the size of your picture before you print it!

QUICK-FONT: The finest Downloadable Character Set Designer/Editor available! Four character sets included on the disk. Use the special graphics character set with Quick-Typer or your favorite word processor to create custom business forms.

TEXT FILE UTILITIES: Print text files or display them on the screen with all hidden command characters revealed!

OVER 30 DETAILED HELP SCREENS and a **QUICK REFERENCE CARD** allow immediate use of PRINT-QUICK supporting the fine 150 page three-ring bound Owner's Manual.

PRINT-QUICK SUPPORTS: The Sider Hard Disk Drive (and other DOS 3.3 volume oriented hard disks), Apple compatible 80 column cards and RAM cards, Apple compatible clock cards, the Apple Mouse, and the Mockingboard.

PRINT-QUICK RUNS on the entire Apple II Family.

PRINT-QUICK supports printers made by Apple Computer, Citizens, C. Itoh, Epson, Okidata, NEC, Star Micronics and their compatibles.



THIRD WAVE TECHNOLOGY, INC.

11934 Lorain Ave. • Cleveland, OH 44111

PRINT-QUICK, QUICK-SETUP, QUICK-FONT, QUICK-TYPER, QUICK-DUMPER and THIRD WAVE TECHNOLOGY are trademarks of Third Wave Technology, Inc. Apple is a reg. TM of Apple Computer, Inc. Mockingboard is a reg. TM of Sweet Micro Systems, Inc. Sider is a reg. TM of First Class Peripherals.

Ask your local dealer for PRINT-QUICK. Feel free to call us at (216) 671-8991 at any time to find out more about PRINT-QUICK (or call 1-800-233-WAVE and place an order! MC & VISA accepted).



only **\$49.95**

Add \$2.00 shipping & handling
FONT DISK I (15 additional fonts) \$19.95

STATUS REPORT



Déjà Vu

"Standards can inspire creativity, but most programmers are still composing doggerel."

by Paul Statt, *inCider* staff

I've seen it all before. That's my complaint about the current crop of Apple IIgs programs. It's more of the same: Macintosh word processors, Amiga painting software, anybody's desktop publishing—it's all been done.

This monotony is no surprise. I spent a week last July looking at IIgs software—and never saw an Apple IIgs. I admired paintings on Amigas, marvelled at Mac graphics; I saw an IBM PC AT; once or twice I even saw a stock Apple IIe souped up with a IIgs motherboard. Most of the writers of IIgs software sat down at a keyboard far removed from an Apple II: They scribbled C, Pascal, or assembly language on some other computer. Like dutiful scribes, they copied old programs onto the new machine.

IIgs developers were forced to use other computers because Apple was slow to deliver IIgs firmware. Apple's C compiler for the IIgs wasn't in the stores; the IIgs Control Panel wasn't on the shelves. Illiterate in the "native tongue," programmers lapsed into what they knew well—Amiga C or Macintosh firmware, for example.

And Apple indeed designed the IIgs to be able to hear the language of foreign machines. IIgs firmware works like Macintosh firmware to ease GS transcriptions for Mac authors; transcriptions from Commodore Amiga programs are easy because both the Amiga and the IIgs are C machines, and C is a portable language (see "Exploring the World of C," p. 60 in this issue, for more information on C programming).

A universal language and universal firmware can inhibit variety in programming: If your firmware has windows, your programs are likely to have windows, even if the job requires a door.

Standards can also inspire creativity: Shakespeare penned sonnets, not free verse. A common interface is firmware form—and despite the inherent constraints, not every IIgs word processor, for instance, has to look like all the others, no more than Elizabeth Barrett Browning sounds like William Shakespeare. The trouble is most programmers are still composing rhymed doggerel.

There's hope for the art of computer programming, though. At Electronic Arts, in San Mateo, California, I was impressed by a program called Electronic Artist's Work Station—the company's home-grown C compiler. It runs on the IBM PC AT, but it's also a "cross-debugger" for every machine for which Electronic Arts creates software, except the Apple IIe and IIc. The result is that the "artist" can write C code on the AT and run it simultaneously on the IIgs, Amiga, or Atari ST.

Jerry Morrison, Electronic Arts' technical director, admits that the Electronic Artist's Work Station is "a barrier to outside development": That is, it makes it harder for home programmers to come up with nifty arcade games and sell them to software companies. On the other hand, for the programmers at Electronic Arts, the Work Station is a versatile tool that gives the creator more time to think, to think about thinking, and to simulate thought in software. That task is tough enough; the designer doesn't need to worry about print spooling, too.

Good software is the product of hard thinking, not neat hardware. When will you see some really good software for the Apple IIgs? You'll see it when software developers quit trying to mimic the success of the Macintosh, Amiga, or any other machine. They'll take some of the time the universal language and firmware of the IIgs have saved them, and sit down for some creative thinking about what the machine can do. ■

When you really want to see how Apple works...

AutoWorks by Alan Bird (AUTOMatic AppleWORKS)

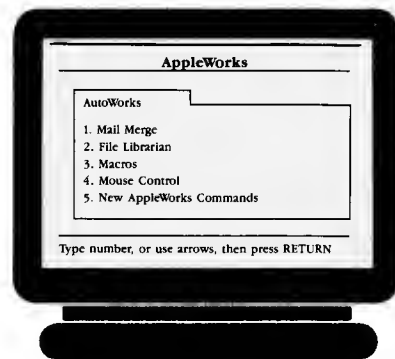
AutoWorks adds to AppleWorks several important time-saving features including mail merge, file organizing, macros, new AppleWorks commands and mouse control.

MAIL MERGE allows you to automatically print form letters and fill out forms from your Apple Works data base files. Form letters are reformatted to accommodate varying lengths of names, addresses, etc. Since AutoWorks is built-in, there is never any need to leave AppleWorks to do a mail merge.

AutoWorks allows you to use your MOUSE to make menu selections and to quickly scroll through and position the cursor in your document, data base file or spreadsheet. This feature alone is worth the price of AutoWorks.

With AutoWorks' powerful MACROS, you can automatically enter hundreds of keys including AppleWorks commands with a single keystroke. You can, for example, print out one or several reports by entering one key. The macros are easily updated instantly using the AppleWorks word processor. New AppleWorks commands are also included with macros such as forward delete, word delete, jump to beginning or end of line, etc. With macros you can even create your own AppleWorks commands.

The Disk Librarian helps you keep track of all your disk files. It reads ProDOS file information directly from your disks into an AppleWorks data base file where you may search for certain files and disks, sort on various file characteristics, find disks with free space, etc. AutoWorks is compatible with AppleWorks versions 1.1, 1.2, and 1.3.



AutoWorks
\$39.95

FontWorks by Mark Simonsen

Good-looking Printing for AppleWorks

Now you can print your AppleWorks files in a variety of typestyles. FontWorks reads your Appleworks files directly (no need to save them in a different format) and prints them with the typefaces you choose. You can even print your files sideways — great for those wide spreadsheets.

There are no complicated commands to learn. FontWorks incorporates the same easy-to-use menu style as AppleWorks.

Choose from 15 typefaces of various styles and sizes, including Broadway, Delphin, Old English, Peignot, Script, Times, and many more. You can use up to 4 of these typefaces at one time when printing your AppleWorks files. And FontWorks comes with its own Font Editor, allowing you to customize our typefaces or create your own.

FontWorks works with any Apple IIe or IIC and is compatible with most popular dot-matrix printers, including ImageWriter, Epson, and Okidata.

Note: Owners of previous versions of FontWorks may upgrade for FREE by returning their original FontWorks (disk only) to The Software Touch.

THE SOFTWARE TOUCH™

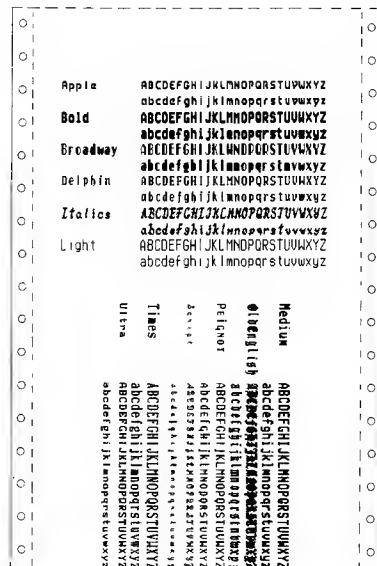
9842 Hibert St., Suite 192 • San Diego, CA 92131 (619) 549-3091

+ \$3.00 shipping & handling, California residents add 6% sales tax
Outside U.S. and Canada add \$5.00.

For Orders Only

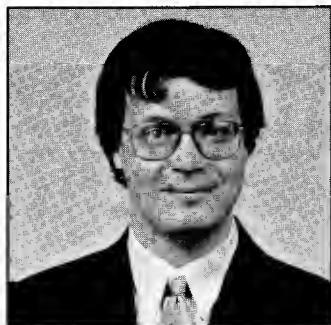
(800) 541-0900 IN CALIF. **(800) 334-3030**

(Apple, AppleWorks, and ProDOS are trademarks of Apple Computer, Inc.)



FontWorks
\$49.95

E.G. FOR EXAMPLE



Erotic Software

"Software vendors are racing for the last place we need them—the bedroom."

by Eric Grevstad, *inCider* staff

The personal computer—I'll start with a bland general statement; things will get gamy soon enough—has found a role in many areas of our lives, from sorting office files to managing home finances. Lately, however, it seems that software vendors are racing for the last place we need them—the bedroom, with a new crop of sexually oriented software. There are programs nowadays you have to hide from your kids.

Computing has always been a male-dominated industry, and there's always been a small, naughty underground of lo-res strip blackjack and racy MacPaint disks, but today smut is rising to the surface. We at *inCider* refused one of its suggestive ads and wondered if readers might object to the others, but no one seems to mind **Interlude II** from Recreational Technology (11011 Richmond #600, Houston, TX 77042). I'm more bemused than angered by it myself, but couples considering *Interlude II* could better spend their \$39.95 on champagne and pretty underwear.

The program (which isn't in the mood all the time; the disk only booted on three of eight Apples in our office) is correctly advertised as a game rather than sex therapy. Players answer a series of questions about their preferences (*Interlude* invariably asks how erogenous your feet are); the program then presents one to five appropriate scenarios.

The sex scenes are utterly explicit, though at various levels. A few are as mild as "Spice Up Your Marriage" hints from *Redbook*; others would fit into *Cosmopolitan*; and the rest—well, one of *inCider's* least feminist employees (he goes to strip clubs on road trips) could only cry, "Gross!" It's nice to take a break from software manuals that discuss back-up and hardware requirements, but *Interlude's* gives safety tips for bondage escapades.

Nothing described in 40-column capitals will ever be tenderly erotic, but *Interlude II* spoils even its low-key scenarios with crass wisecracks—"That horny, huh?" "I feel your fingers on my keys!" "My RAM's getting tired." It nods toward affectionate lovemak-

ing, but *Interlude's* heart is in sniggering scenario titles like "Peek-A-Boob" and "Hookie Nookie."

Things don't seem much better elsewhere. Avalon Hill, an outfit best known for war games, has signed the chirping counselor Ruth Westheimer for **Dr. Ruth's Game of Good Sex**. I haven't seen the software yet, but watched her TV show and saw a commercial for the board game—two couples laughing hilariously at "Zipper stuck, lose a turn."

Infocom, the nonpareil text-adventure company, promises rollicking sex comedy with the forthcoming **Leather Goddesses of Phobos**, but the game also promises a headlong dive into tackiness (a voluptuous 3-D comic book and clues on scratch-and-sniff cards).

Before you call me a miserable Puritan, let me admit not only that sex is part of life, but that I've seen it treated tastefully in one software package—Activision's **Alter Ego**. The "game" part of psychologist Peter Favarro's simulation is a dull job of periodically rating your assumed personality's happiness, trustworthiness, and similar scores, but the life experiences are realistic, matter-of-fact vignettes. That applies to the ones about sex as well as those about schooling, work, and finances.

When Activision sent the female version, I thought I'd be a voyeur at girls' locker-room scenes; instead, I found sensitive accounts of everything from adult affairs to high-school dating (I'd forgotten how terrible teenaged boys are). The male version is a bit lewder, with temptations from hookers and strippers, but *Alter Ego* generally avoids prudishness and prurience alike.

In the words of James Thurber and E.B. White (*Is Sex Necessary?*), "Sex is by no means everything. It varies, as a matter of fact, from only as high as 78 percent of everything to as low as 3.10 percent. The norm, in a sane, healthy person, should be between 18 and 24 percent." I'm not sure we need to have sex in software at all, but we can certainly do better than the down-and-dirty attitude of *Interlude II*. Relationships start with holding hands, not elbowing people in the ribs. ■

"Make sure you get the value you deserve."



Andrew P. Niemic
President of Checkmate Technology

WHAT DOES CHECKMATE OFFER YOU?

MultiRam RGB - 1 megabyte capacity memory card for the Apple //e that is expandable to 7 megabytes. Features include a built-in RGB video card. Priced from \$199.95 (64K, suggested list). Battery-backed option available soon.

MultiRam //e - 3/4 megabyte capacity memory board for the Apple //e. Large memory for a small price! Priced from \$159.95 (64K, suggested list).

MultiRam //EX - the original and the best no-slot "mini-board" that uses the 65C816 microprocessor to turn your computer into a true 16-bit computer. Priced from \$189.95 (suggested list).

MultiRam CX & 16-bit Option - 1/2 megabyte capacity memory board for the Apple //c. Features simple installation with no soldering or disk drive removal. With the addition of the CX Kit, the //c may also be upgraded to a true 16-bit computer. Prices start at \$199.95 (256K, suggested list). Optional 65816 Kit - \$119.95 suggested list.

MultiRam CX PLUS - this "piggyback" board for the MultiRam CX allows an additional 512K RAM to be added, for a total of 1 megabyte on your Apple //c. Prices start at \$249.95 (256K, suggested list).

MultiRam Software - the key to releasing the power of your MultiRam card is provided with each memory card. Includes AppleWorks™ expander, RAM disk software and a complete set of utilities for maintaining your card.

All MultiRam memory boards are fully compatible with International Apples. For complete information about our newest products, please call TOLL-FREE (800) 325-7347, local (602) 966-5802, or write for information.

Apple //e, Apple //c and AppleWorks are registered trademarks of Apple Computer Corporation

Andrew P. Niemic, President of Checkmate Technology speaks out.

"Many Apple II owners find that buying a RAM card is a confusing process. Conflicting claims by manufacturers only cloud the issue".

"User Groups are known for being knowledgeable and not influenced by any profit motive. They are responsible to no one but their members. Here is what their reviewers have said when comparing memory cards":

"In my opinion, the MultiRam//e card by **Checkmate Technology** is superior in several respects... It has the best manual, easiest to use software set-up, very friendly customer service, it is expandable and upgradeable without becoming obsolete like some of the other cards. Best of all, you get most features for best price." -**Joe Farkas, CRAB-Apple Bulletin, County of Rockland Apple Branch, January 1986.**

"After using the **Checkmate MultiRam RGB**, I can see that they aren't selling sales hype; they actually have a good product that doesn't need hype." -**Dick Ferris, Apple LUG News, Apple Lansing Users Group, September 1986.**

"The **MultiRam RGB** card is presently the most versatile memory card for the Apple //e and less expensive than several others..." -**Dr Kolan K. Bisbee, The Spokesman, The New York State Technology Education Association.**

GETTING THE VALUE YOU DESERVE

We're so convinced that MultiRam is your best value in a memory card, that we'll give you one more reason to choose MultiRam. From October 15, 1986 through December 31, 1986, a \$10.00 rebate will be paid directly by Checkmate for every MultiRam card purchased.

\$10.00 REBATE COUPON

Get a \$10.00 rebate on ANY MultiRam extended memory card for your Apple //e or //c.

Send your completed warranty card along with your original purchase receipt to Checkmate Technology. Your receipt must be dated between 10/15/86 and 12/31/86; all rebate requests must be received by 1/31/87. Only one rebate will be paid for each card.



**Checkmate
Technology**

509 S. Rockford Dr. • Tempe, AZ 85281
(602) 966-5802 • (800) 325-7347
MCI Telex: 6502788652

In Canada Contact EDP Marketing (403) 482-3014

NEW PRODUCTS

edited by Lafe Low

Hardware

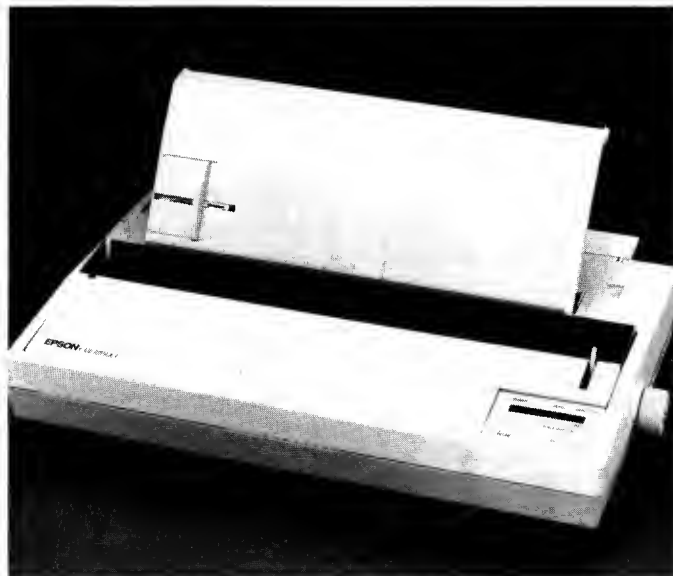
Quick and Easy

A trio of new **dot-matrix printers** from Epson feature high speed and easily defined typesets.

The Epson EX-800 prints at a rate of up to 300 characters per second in draft mode and 54 cps in near-letter-quality, making it Epson's fastest nine-pin printer. Eliminating the need to memorize control codes or change DIP switches, its eight-button typestyle-selection panel lets you choose from draft, pica, elite, normal, NLQ roman, NLQ sans serif, proportional, and condensed typefaces. For a little extra, you can have a color-output option that can produce seven hues and a 32K expanded print-buffer option. The Epson EX-800 sells for \$749.

The EX-1000 is Epson's fastest nine-pin wide-carriage printer, running at speeds of up to 300 cps in draft mode and 60 cps in near-letter-quality. The 136-column EX-1000 is suitable for producing spreadsheets, business graphics, engineering applications, and other wide-format documents. Like the EX-800, the 1000 features the SelectType II control panel, which lets you choose from eight typestyles by pressing a button.

The LQ-2500, a 24-pin dot-matrix model, prints at 324 cps in draft mode and 108 cps in letter-quality mode. The SelectType III liquid-crystal-display panel lets you enter and store commands for 14 printer functions. The LQ-2500 is flexible enough for high-



Epson's LQ-2500 dot-matrix printer has draft and letter-quality modes, and can store up to 14 print-function commands.

speed, large-volume printing and high-resolution letter-quality printing. The Epson EX-1000 and LQ-2500 retail for \$995 and \$1595, respectively, from Epson America, 2780 Lomita Boulevard, Torrance, CA 90505, (213) 539-9140. Circle Reader Service number 369 for more information.

Hard Driving

HardWorks is a **20-mega-byte hard drive** that's less sensitive to the bus noise and odd timing of some Apple II and Franklin computers. HardWorks supports DOS 3.3 and ProDOS, Apple Pascal, and Softcard or PCPI CP/M. The hard-disk drive retails for \$999; three versions of software (supporting different operating systems and controller cards) are available, ranging in price from \$69 to \$149. Contact the A.S.C.I.I. Co-op, 682 East Wind Road, Tecumseh, MO 65760, (417) 679-3526, or circle Reader Service number 365 for more information.

Sound Idea

Synthesize speech, music, and sound effects on your Apple with The Phasor, a **synthesizer card** with 12 simultaneous sound channels and four white-noise generators. It's fully compatible with the Mockingboard, the ALF music card, Symphonix, and the Super Music Synthesizer. The card's ProDOS-based software includes a music editor, sound-effects editor, text-to-speech converter, and more than 30 songs and sound effects. The Phasor retails for \$179, from Applied Engineering, P.O. Box 798, Carrollton, TX 75006, (214) 241-6060. For more information, circle Reader Service number 364.

Monster Mash

Keep your printer cables from snagging your paper with Monster Cable's new **90-degree Centronics connectors**. They feature a right-angle hood design that directs the printer cable out of the path of continuous-

feed paper. Monster Cable's new line also features relocatable pins, which let you change the cable-connector pin configurations to suit a wide variety of hardware and peripherals. Get in touch with Monster Cable, 101 Townsend Street, San Francisco, CA 94107, (415) 777-1355, or circle Reader Service number 366 for more information.

Power Up

Now you can turn on your entire computer system with a single switch. The Power Mouse **remote power-control unit** lets you connect up to five separate components or peripherals. It also protects your system against voltage surges, electromagnetic interference, radio-frequency interference, and static, and your modem and telephone line against spikes and surges. The remote power module mounts unobtrusively under your desktop or table. Control your system for \$199.95 with the Power Mouse, from Networx, 203 Harrison Place, Brooklyn, NY 11237, (212) 821-7555. Circle Reader Service number 371 for more information.



Networx's Power Mouse gives you remote control of five computer components.



Disky color-coded floppy disks from Boeder Magnetics are available in single- and double-sided storage formats.

Colorful Disks

Keep your disks in order and recognize them at a glance. The Disky line of **color-coded 5 $\frac{1}{4}$ -inch floppies** comes in red, blue, yellow, and green. These high-quality disks from West German manufacturer Dobbelin & Boeder are available in single- or double-sided storage and are temperature-resistant up to 63 degrees centigrade. These colorful disks come in packages of ten (two of each color plus two black) for \$18 (single-sided) or \$19 (double-sided) from Boeder Magnetics (American subsidiary of Dobbelin & Boeder), 828 Hillcrest Boulevard, Inglewood, CA 90301, (213) 216-0771. For more information, circle Reader Service number 370.

Universal Interface

Hook your computer up to just about any other electronic device with the Simple Interface //e System, a **general-purpose I/O system**. You can connect

up to eight switches for lamps, relays, or small motors to construct your own security system, home controller, light display, or whatever system you like. The Simple Interface //e card plugs into a CPU slot and is connected by a 36-inch cable to signal conditioning circuits housed in a sturdy cartridge case outside the CPU. Program your operations through BASIC or machine-language commands. The Simple Interface //e card retails for \$46.95, from Proteus Electronics, Spayde Road RD2, P.O. Box 693, Belleville, OH 44813, (419) 886-2296. Circle Reader Service number 368 for more information.

Software

Your Choice

Activision has diversified into **home and personal productivity** with its Personal Choice Software line. Writer's Choice, Filer's Choice, and Planner's Choice are the first products in this new series,

available individually or as a set, the Personal Choice Collection. Writer's Choice includes a full range of writing and editing features, a 50,000-word spelling checker, help screens, and a full layout-preview option. Filer's Choice lets you create custom "index cards" and sort records alphabetically or numerically. Planner's Choice features horizontal and vertical windowing (to view different sections of the spreadsheet simultaneously) and adjustable column width. Designed to work together or individually, the Personal Choice Collection retails for \$119.95, or \$49.95 each, from Activision, 2350 Bayshore Frontage Road, Mountain View, CA 94043, (415) 960-0410. For more information, circle Reader Service number 350.

Seeing Stars

You don't need a telescope to see the stars: Three **astronomy programs** from Hubbard Scientific teach you all about stars and constellations. Computer Star Games/Stellar 28 is a series of 28-plus games and activities that help you learn about more than 100 stars and constellations. It's available separately or combined with the board game Stellar 28.

Computer Starfinder, a data base of planets and constellations, includes a graphics library showing the positions of stars according to year, month, day, hour, and minute for the years 1900 to 2100 A.D. The program is also available with the book *Seasonal Star Chart*.

Astro-Data Bytes is an up-to-date data bank of astronomy facts with information on comets, asteroids, meteors, moons, planets, stars, celestial phenomena, discoveries, events, and instruments. The program also comes with the *Hubbard Astronomy Fact Book*. Computer Star Games and Computer Starfinder retail for \$44.95 with game or book, \$39.95 without. Astro-Data Bytes is priced at \$59.95 with accompanying book, \$58 without. The three programs, with games and books, are also sold as a set for \$145, from Hubbard Scientific, 1946 Raymond Drive, Northbrook, IL 60062, (312) 272-7810. Circle Reader Service number 372 for more information.



Study the heavens with Hubbard's astronomy programs.

Product descriptions contained in this section are based on information supplied to us by the respective manufacturers. These announcements are provided solely as a service to our readers and do not constitute endorsement by inCider of any given product.

BOOSTER

KIX
PRODUCTIVITY

*Kix is a Powerful
ProDOS Shell which
Increases the Productiv-
ity and Ease of Use of Your
Apple II.*

Add the power of UNIX to ProDOS! Print directories, manipulate files, search for key words, protect files, compare documents, and more—quickly and easily.

KIX is also a Powerful Accessory to AppleWorks.

Call KIX commands directly from the desktop, without leaving AppleWorks! KIX saves you valuable time every time you use your computer!

TRY IT FOR 30 DAYS!

**If KIX doesn't save you a lot of valuable time,
return it for a refund.**

You can't lose!

At \$49.95, KIX is a Real Bargain!

To Order Call:

415-626-2080

Send Check/Money Order to:

**Kyan Software Inc. Dept 7
1850 Union Street #183
San Francisco, CA 94123**

Enclose \$4.50 for shipping; \$15.00 outside North America; Calif. residents add 6.5% sales tax. KIX requires 64K of memory and two disk drives.

Circle 91 on Reader Service Card.

NEW PRODUCTS

The French Connection

Travel to the City of Light with Ticket to Paris. In this **simulation of Parisian life**, you book a hotel room, visit the Louvre, change money at a bank, and dine in a fancy restaurant. You can speak French to get around in the city, but if you get stuck, the game includes an English-language option. Get a taste of life in Paris while brushing up on your French. Ticket to Paris sells for \$39.95, from Blue Lion Software, P.O. Box 650, Belmont, MA 02178, (617) 489-2477. Circle Reader Service number 361 for more information.

Print That Tune

Musicians can now **write complex notation** on their Apple II's with MusicPrinter. This composition program permits fast entry of notes, chords, and a full range of musical characters, and includes its own word processor with three font styles for inserting lyrics. You can print your music as single lines, full scores, or individual parts in normal, compressed, and emphasized modes. MusicPrinter sells for \$149, from Temporal Acuity Products, Building One, Suite 200, 300 120th Avenue NE, Bellevue, WA 98005, (800) 426-2673. For more information, circle Reader Service number 362.

Two-D Design

CAD-2 Professional allows **advanced two-dimensional drafting**, with time-saving functions such as auto-dimensioning, magnetic point snap, and user-definable snap grids. You can easily extend flat drawings to three dimensions, then view them from any angle, distance, or height.

CAD-2 Professional includes RoboView, a three-dimensional-perspective program, and RoboData, a bill-of-materials program. This package retails for \$1720, from Robo Systems, 111 Pheasant Run, Newtown, PA 18940, (215) 968-4422. Circle Reader Service number 363 for more information.

Shopping for Numbers

Challenge your students with real-life work situations in the Math Shop mall. Students enter any of the ten shops, and, using their **math and problem-solving skills**, lend a hand by making donuts, cutting lumber, distributing eggs, or any of a variety of other chores. The school edition of Math Shop sells for \$87.45, the home version for \$49.95, from Scholastic Software, 730 Broadway, New York, NY 10003, (212) 505-3000. For more information, circle Reader Service number 357.

Collection Organizer

Stamp and coin collectors can organize their material with specially designed data bases from Andent. The Stamp Collector and The Coin Collector each consist of six programs that help you organize your foreign and domestic stamps or coins by denomination, country, description, year, value, Scotts catalog number, and source. A Meeting List in each program lets you sort and select gatherings by date and location. A Source List gives you names of suppliers and information on trades and liquidations. The Stamp Collector and The Coin Collector retail for \$49 each, from Andent, 1000 North Avenue, Waukegan, IL 60085, (312) 223-5077. Circle Reader Service number 351 for more information.

BUSINESS • SCIENCE • EDUCATION

The complete
Apple II
statistical
package
for only:

\$99

APP-STAT™

A Powerful Tool for Data Analysis and Forecasting

- Easy to use, no commands to memorize (menu-driven)
- Descriptive Statistics, t-tests (independent and dependent samples), General ANOVA/ANCOVA (up to five factors, **unlimited number of cases**, Repeated Measures, unbalanced designs, contrasts, adjusted means, and more), Correlations, Multiple Regression (up to 15 predictors, **unlimited number of cases**), Crosstabulation, Significance Tests, 10 Nonparametric Statistics, and more
- User defined (multiple) conditional selection of subsets of cases, various ways of treating missing data
- Flexible Data Editor, easy entering/editing of data, complex (conditional) transformations of variables, and more
- Can also access files created by spreadsheets and data bases
- Barcharts, Scatterplots, clear comprehensive output
- Will run on APPLE II+, IIc and IIe with 80 column display, 1 disk drive

To order send check or money order for \$99
(plus \$5 for shipping and handling) to:



StatSoft™



2832 East 10th Street, Suite 4, Tulsa, OK 74104. (918) 583-4149

ASK ABOUT THE VERSION FOR MACINTOSH!

Apple and Macintosh are a registered trademark of Apple Computer, Inc.

7 Meg Iie/1 Meg Iic

Don't buy an over-hyped over-priced card that rams itself down your throat with overpowering advertising. You can buy **Checkmate Technology's State-Of-The-Art MULTIRAM RGB RAM CARD™** from Coit Valley Computers w/**BATTERY BACKED-UP STATIC RAM** options that can load & save programs like AppleWorks for 10 years! It's a **FASTER CHEAPER REPLACEMENT FOR HARD DISKS**, is **USER EXPANDABLE TO 7 MEGABYTES**, compatible with all (100%) 3rd party software/hardware, has an optional 16-Bit 65C816 slot saver Co-Processor card (\$157), sharp 80 columns, super Double Hi-Res, & **FREE RGB***! It's a direct substitute for Ramworks II™ or Apple 80 col cards, has a 5 yr warranty & **FREE AUTOMATIC SOFTWARE UPDATES ONLY FROM US!** Unlike Ramworks II, which can cost \$13000+, MultiRam fits ALL (even Euro) Apple Iie's, can't interfere w/ slot 1 cards, has no soldered chips & costs less!

MultiRam RGB expands to 1 Meg RAM + optional 4 Meg's battery protected piggyback RAM + optional 2 Meg's STATIC RAM. MultiRam Iie expands to 768k and can piggyback w/ MultiRam RGB.

FREE APPLEWORKS EXPANDER SOFTWARE WITH EVERY MULTIRAM CARD — loads ALL (even printer routines) or PARTS of AppleWorks, runs faster, expands Desktop over 2048k, stores 23,000+ records & 4,800+ word processor lines, auto-segments large files onto multiple disks! **FREE APPLEWORKS TIME/DAY/DATE ON-SCREEN** w/ clock, **AUTO-COPY TO RAM**. **ULTRA-FAST PRODOS/DOS 3.3. RAM DISK & RAM TEST.** Optional CP/M & Pascal Ram disk (\$20/ea)

	MultiRam RGB Card	MultiRam Iie Card
64k MULTIRAM	169.	129.
128k MULTIRAM	179.	139.
320k MULTIRAM	199.	164.
576k MULTIRAM	229.	199.
832k MULTIRAM	254.	234.
1024k MULTIRAM	279.	← ← ← ← ←
1344k MULTIRAM	419.	-
1600k MULTIRAM	449.	-
1792k MULTIRAM	479.	-

Apple Iie Enhancement Kit	62.
Cermetek 1200 Baud internal modem Iie/II+	184.
Incomm 2400 Baud external univ. modem	359.
Clockworks Clock (Thunder/Time HO™ comp)	89.
13" Teknika RGB Monitor*	322.
Accelerator Iie-350% speedup card	227.
Pinpoint Program or Spelling Checker (ea)	49.
ProAPP 10 & 20 Meg Hard Disk Drives	Call
Pico™ Slimline Drive Iic/Iie/II+	158.
256k Memory Chips-1 yr warranty (8)	42.

Terms: Add \$4-Ground or \$6-Air shipping & phone # to each U.S. MultiRam card order (foreign orders/FPO/APO extra). Add 3% for MasterCard/Visa (include #/expir) & P.O.'s. For fast delivery send Cashier's/Certified check, Money Order. C.O.D. (add \$6) & personal checks accepted (allow 16 days). **Tex res add 6 1/8% tax.**

Ramworks II/TimeMaster II H.O./Z-ram II, Flipster, respective trademarks of Applied Engineering, Cirtech. *Call for RGB Connectors/cables (not included).

Checkmate Technology's MultiRam CX card easily expands your Iic to 640k and has a **CX+ Piggyback to add another 512k (over 1.1 Meg total)!** It's 100% compatible with all Iic software/hardware & unlike Z-Ram™ & other Iic cards, can be upgraded with 65C816 kit (\$129) to likely run new technology software! It comes with the **SAME FREE SOFTWARE, UPDATES & 5 YR WARRANTY AS Iie CARDS** (see above).

- **UNLIKE Z-RAM II, THERE ARE NO MOTHERBOARD JUMPER WIRES OR CLIPS TO ATTACH, OR DRIVE REMOVAL REQUIRED FOR INSTALLATION. USES ABOUT 50% LESS POWER** than Z-RAM II causing less power supply strain or battery drain.

OUR LOWEST PRICE

256k MULTIRAM CX	189.
512k MULTIRAM CX	222.
512k MULTIRAM CX+	CALL

1200 Baud Iic Modem (+\$20/cable)	159.
Clip-on Iic Rechargeable Battery	129.
Iic Flat Panel Display	379.
Iic System Clock (Same as A.E.)	66.

WHY BUY FROM COIT VALLEY COMPUTERS RATHER THAN SOME MAIL ORDER HOUSES? Only we offer a **15 day MultiRam money back satisfaction guarantee**, double software, more support, **free automatic software updates**, free 64k w/ each 256k/512k/768k Iie card. We know the products, & stock them for fast shipping! **CALL FOR QUESTIONS, PRICES, DISCOUNTS. SCHOOLS & GROUPS WELCOME.**

ORDER FORM

COIT VALLEY COMPUTERS (214) 234-5047
14055 Waterfall Way Dallas, Texas 75240

NAME _____

ADDRESS _____

CITY _____ STATE _____ ZIP _____

PHONE () _____

SIGNATURE _____ IB _____

QTY	DESCRIPTION	PRICE

MC/VISA _____ SHIPPING _____
EXP _____ TOTAL _____

COIT VALLEY COMPUTERS
(214) 234-5047

MCI 2969684
Telex 6502969684 (WUI)

14055 Waterfall Way
Dallas, Texas 75240

Product Updates

● The latest edition of **MouseFiler** has some new features and enhancements: Version 1.1.4 can copy and paste directories, and includes a delete function that operates on directories and subdirectories. In addition, the file-copy buffer size has been increased by 250 percent, and the Directory window now stays where you drag it, instead of returning to its original screen position when you change directories. MouseFiler version 1.1.4 sells for \$39.95, from Harbor Software, 430 Great Road, Suite 8, Acton, MA 01720, (617) 263-1870.

● Blue Chip Software is bundling three of its financial-simulation software packages for educational use. **Millionaire**, **Tycoon**, and **Baron** will come in one package, **The Challenge**, including disk and manual for each program. Students can get a feel for Wall Street finance through simulations of stock-exchange, real-estate, and commodities markets. Invest in The Challenge for \$99.95, from Blue Chip Software, 6744 Eton Avenue, Canoga Park, CA 91303, (818) 346-0730.

To the Moon

Explore the surface of the moon, or at least pretend to, in the new **adventure game** **Lunar Explorer: A Space Flight Simulator**. Maneuver your craft over the moon's rugged surface, perform rescue missions, and touch down at lunar bases, refueling stations, or the Apollo 11 landing site. Become a space pilot for \$40, from Electric Transit, 501 Marin Street, Suite 116, Thousand Oaks, CA 91360, (805) 373-1960. For more information, circle Reader Service number 358.

Resources

Electronic Magazines

Seven of Time Incorporated's publications are going to be offered on the Vu/Text electronic information service. *Time* will be the first **on-line magazine**, and the others—*Life*, *Fortune*, *Sports Illustrated*, *People*, *Money*, and *Discover*—will follow shortly. Vu/Text is the world's largest full-text newspaper data bank with more than 30 publications, including *The Boston Globe*, *Chicago Tribune*, *Detroit Free Press*, *Miami Herald*, and *Philadelphia Enquirer*. Contact Vu/Text Information Services at 1211 Chestnut Street, Philadelphia, PA 19107, (215) 665-3300, or circle Reader Service number 356 for more information.

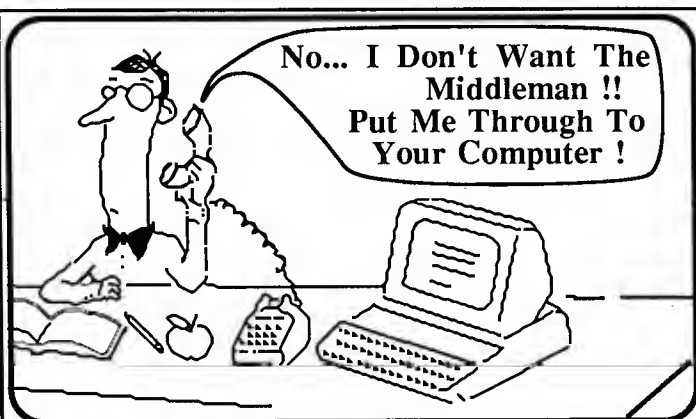
covers 65816 hardware organization, 8- and 16-bit modes, the complete 65816 instruction set, detailed command explanations, 6502-emulation techniques, serial and parallel I/O, and other programming structures. **65816/65802 Assembly Language Programming**, by Michael Fisher, discusses code conversion, sorting and searching, subroutines, I/O and interrupts, testing and debugging, and includes a wide range of programming information for beginners and experts. *Programming the 65816* retails for \$33.95, from Sybex Computer Books, 2344 Sixth Street, Berkeley, CA 94710, (415) 848-8233. **65816/65802 Assembly Language Programming** sells for \$19.95, from Osborne/McGraw-Hill, 2600 Tenth Street, Berkeley, CA 94710, (415) 548-2805. For more information, circle Reader Service number 353 or 354, respectively.

Music Lovers On Line

If you're a music lover with a computer and modem, check out The Audio-ophile Network, a new **data-board system** that lists information, specifications, prices, and the latest news on high-end stereo components. The network operates 24 hours a day, seven days a week in the Los Angeles area. Dial (818) 988-0452 with your modem; there's no charge for the service. For more information, call voice line (818) 782-1676, write The Audio-ophile Network at 14155 Kittridge Street, Van Nuys, CA 91405, or circle Reader Service number 355.

65816 Help

Programmers working on computers using the **65816 chip** (the Apple IIGS' CPU) will want to take a look at these two new books. *Programming the 65816*, by William Labiak, is an introduction and reference for programming systems in native machine language. It



MODEMS: Avatex 1200/300 Baud now @ \$119

LET'S TALK: Turn your Apple into an easy to use on-line information center. \$175

TALK BACK: Access another computer at the press of a key. Editors' Choice. \$79

Ask your Apple Dealer about FREE on-line access to UPDATE. Enjoy on-line product reviews, features by famous authors, downloadable software, and more!

RUSS Systems...helping people communicate.



RUSS Systems, Inc.
1344 Pacific Ave. # 103
Santa Cruz, Ca. 95060



(408)



425-INFO

458-5080

THE ONE VITAL PIECE OF OFFICE EQUIPMENT THAT OUR DESKWORKS™ PROGRAMS DON'T REPLACE

They don't make coffee. But together, PBI's three top-selling business products can make your day a lot easier. Eliminate hours of busywork, organize loose ends, turn your Apple II into a powerful communications tool and increase the power of Apple Works.

Introducing CommWorks™* The Complete Telecommunications Solution



No other communications software package is as easy to use and as powerful as PBI's CommWorks. It's a logical companion to AppleWorks. CommWorks can save you time and money; imagine being able to access your favorite section of CompuServe automatically at the touch of a key. Transfer AppleWorks and ProDos files or even whole disks instantly (5¼" or 3½")—no conversion

necessary. With CommWorks' AppleWorks file folder interface, auto log on facility, macros, on-line text editor, and communications files, telecommunicating is faster and more efficient than ever. CommWorks even supports the Hayes 2400 baud modem, 3.5 UniDisk, and popular RAM expansion cards.

Jeeves™, The Affordable Personal Assistant



It's the fastest desktop organizer available anywhere for the Apple IIe and IIc. It replaces your appointment book, phone directory, four-function calculator, memo pad, alarm clock and more. It resides transparently in RAM memory alongside AppleWorks, CommWorks or other ProDos based programs, so it's always there instantly upon command.

GraphWorks™ Two Programs in One



What does AppleWorks lack? Graphics. Now put together impressive presentations with ease. GraphWorks enables you to use data directly from AppleWorks spreadsheet files to create four different graph-types: pie, line, bar, and stacked bar. Plus a bonus feature: GraphWorks will even print your extra wide spreadsheets "sideways" down the page.

Replace your outdated office equipment with the DeskWorks line from PBI. It makes the daily grind a whole lot easier. And leaves you time for longer coffee breaks. CommWorks \$95.00. Jeeves \$49.95. GraphWorks \$79.95. Available at your

local dealer or order directly from us, 9AM to 5PM PST, by calling:

800-843-5722 (nat'l)
800-572-2746 (CA)

PBI Software Inc.

1111 Triton Drive, 2nd Floor
Foster City, CA 94404, (415) 349-8765

*Receive a free subscription to CompuServe and \$15 free access time with your CommWorks purchase.

Send us your present communications package and receive a \$25 discount on Commworks (when purchased directly from us).

CommWorks requires IIe (w/ext. 80 column card & 128K) or IIc and modem. Jeeves requires stand alone IIc or enhanced 128K IIe with interrupting source. GraphWorks requires IIe (w/ext. 80 column card & 128K) or IIc and AppleWorks. Trademarks: CommWorks, Jeeves, GraphWorks and DeskWorks—PBI Software, Inc.; Apple II and AppleWorks—Apple Computer, Inc.; Hayes—Hayes Microcomputer Products, Inc.

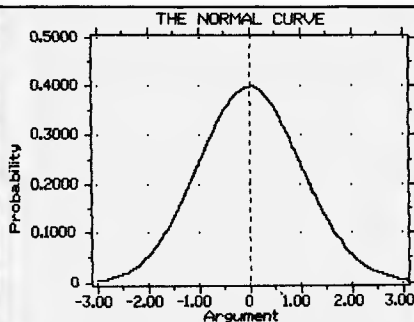
Circle 52 on Reader Service Card.

DASH ACCOUNTING

POWERFUL*EASY-TO-USE*FULLY INTEGRATED
ACCOUNTING SOFTWARE INCLUDES:
*GENERAL LEDGER *ACCOUNTS PAYABLE
*ACCOUNTS RECEIVABLE *PAYROLL
*INVENTORY CONTROL For the Apple IIe/c

ALL FOR JUST \$99.00
1 (800) 628-2828 EXT 625

Circle 50 on Reader Service Card.



Function Plotting! APLOT is a sophisticated curve plotting program which eases the task of plotting any type of data, especially scientific data, on Apple II computers. Data may be entered from disk, the keyboard, or by typing in any function, and APLOT will plot it. Only \$18.95, APLOT's performance meets or exceeds that of similar programs that cost \$30, \$40, or more. Write Wesha Technologies, 4911 So. Canyon Road, Rapid City, SD. 57702, or call (605) 348-0432. VISA and Mastercard accepted.

Circle 109 on Reader Service Card.

Great Christmas Gifts
Recommended by Roger Wagner

inCider SUPER INDEX

On-disk database summarizes *inCider* Magazine, including programs, tips & letters. Cross-references corrections and updates. Ends fruitless searches through stacks of magazines. Like a "tip-book" cites 1000's of fixes. Guaranteed to save TIME and MONEY!
\$5 for 1986, \$9 for 1984 and 1985

FASTFIND SEARCH UTILITY

Up to 100 times faster than word processors! AND/OR/NOT logical operators & wild card. Search multiple disks with single keypress. Find *lost files*, even if you forget their names! Print reports. A.P.P.L.E.'s best seller! Bonus SPEEDOS. Any APPLE II or III.

\$12 & get either INDEX above
Add: \$2 Ship/handling, CA resid. 6.5% tax, Overseas \$3
FASTFIND CO., 28503 Coveridge Dr., Dept. CC
Rancho Palos Verdes, CA 90274
VISA or MasterCard (213) 544-2350
Modern orders save 4%: 300/1200 baud, 8 bit, no parity (213) 377-0804

Circle 11 on Reader Service Card.

REPEATERRRR™ upgrades your Apple II or II+; speeds up word processing, editing, VisiCalc

Auto Repeats any keypress;
Shift-Key Modification allows for upper-lower case shifting;
Easy installation: no soldering

REPEATERRRR™
w/o Shift Key + S&H-\$39.95
w/ Shift Key + S&H-\$49.95



High Order Micro Electronics Corp.
17 River St., Chagrin Falls OH 44022;
1-800-626-2626, Ext. 634

Circle 228 on Reader Service Card.

UNENHANCED vs ENHANCED We do it both ways! A MOUSETRAP is the solution Now you can have it all

Mouse characters and old text characters on your enhanced IIe. Add mouse characters to your original unenhanced IIe. MOUSETRAP is a plug-in replacement module for your character generator ROM. Compatible with all IIe's enhanced or unenhanced. (U.S. standard NTSC) Installs in 5 minutes. Includes two position switch to select either old text or new mouse characters. No other parts or programs necessary. Mode can be switched at any time, or during any program, which is better than any pre-boot back switching scheme.
\$49.95-6 month limited warranty
To order directly by M/C or Visa, call Monday-Friday 8:00-5:00 MST or enclose check, cashiers check, or M.O. For personal check, allow additional 14 days.
Add \$1.50 for shipping & handling.
For COD add additional \$4.00
Colorado residents add 3.6% sales tax.

BONE FRONTIER CO.
P.O. BOX 279
Broomfield, Co. 80020-0279
1-303-427-8729

Dealer & Distributor inquiries invited

*Apple IIe is a registered trademark of Apple Computer Inc.

AppleWorks Goes to School with... SchoolWorks

SchoolWorks: Teacher
SchoolWorks: Office
SchoolWorks: Athletic Director

Take advantage of AppleWorks' power. Three programs give you 100+ ready-to-use templates! Includes a spreadsheet gradebook, test maker, ledger accounts, sports stats, and more! Not copy protected so you can use in your entire school building.

\$55.00 each. \$99.00 for 2
Get all 3 for \$125.00 on 30 day approval. 5% shipping and handling. Free catalog of administrative software.

K-12 MicroMedia Publishing
6 Arrow Road, Ramsey, NJ 07448
(600) 922-0401

Circle 121 on Reader Service Card.

WE TURN APPLES INTO GOLD WITH A
LITTLE ALCHEMY AND LOTS OF ENGINEERING

SINCE 1981

RGB CARDS

APPLE II/E AND II+ COLORMASTER \$99.
& FRANKLIN 2000: KALEIDOSCOPE // \$139.

FRANKLIN 1000, 1200: COLORMASTER \$119.
KALEIDOSCOPE // \$149.

Cards plug into slot 7. Can be interfaced with II+ 80 column card, or IIe 80 column/RAM card.

Compatible with all RGB monitors.
Cable and connector supplied, + much more.

APPLE II/C RGB: \$119.

SONY CPD 1310 super hi-res 13" RGB monitor: \$385.

Bar Code Label System: \$349

Bar Code Reader: \$199

TELEMAX, INC. P.O. BOX 339
WARRINGTON, PA 18976 (215) 343-3000

TOLL FREE: 950-1088, wait for tone,
then dial **TELEMAX** (touch tone)

Circle 252 on Reader Service Card.

RIBBONS

OVER 300 TYPES!

Examples:

	Black	Colors
Apple Imagewriter	\$2.75	3.30
Diablo HTII M/S	\$2.40	
EPSON MX-RX-FX 80	\$2.45	2.95
MX-RX-FX 100	\$3.40	3.95
LX-80	\$3.50	3.75
LQ-1500	\$3.50	3.75
NEC 3500	\$3.95	4.50
5500/7700	\$3.50	3.75
8023	\$2.75	3.30
Okidata 80-82-92	\$.90	1.25
192-193-182	\$4.25	5.05
Panasonic KXP	\$4.50	

CALL

1-800-331-6841

1-513-865-0947 (OHIO)

Circle 80 on Reader Service Card.

FOR APPLE IIe, C, + & MAC

MULTIRAM RGB 1 Meg (Checkmate) IIe	\$269
—do— 512K (Checkmate) IIe	\$219
RAMWORKS III 1 Meg by AE for IIe	\$249
—do— 512K by AE for IIe	\$199
RAMFACTOR 1 Meg \$289, Battery B/U	\$149
—do— 512K by AE for IIe +	\$269
SPEED-UP CARD: Transwarp (AB) IIe +	\$229
—do— SpeedDemon MCT IIe +	\$149
ZRAM IIe (AB) = > 1 Meg \$449, 512K	\$299
MULTIRAM CX512K or CX + 512K	\$199ea
10MB SIDER DRIVE or 20MB TAPE DR	\$589ea
Excellent DRIVE IIe = > \$139, MAC + = >	\$259
UNIDISK 5.25 \$199, Drive Controller	\$49
FINGERPRINT \$99; Printer/Modem cable	\$20
GRAPPLER + \$89, 64K Buffered GRAPPLER	\$139
BUFFER P/P = > 128K \$99, 512K \$349, 2MB	\$895
SYSTEM SAVER IIe + \$59, for Macintosh	\$79
SURGE SUPPRESSOR-6 w/EMI/RFI filter	\$19
Shipping Charges (surface \$3; \$100 in Continental U.S.A. Prices subject to availability & changes without notice. We do not guarantee product compatibility in any manner.)	

COMPUTERS PLUS COMPANY

2303 N. 44TH ST. #2
PHOENIX AZ 85008
PHONE: 602-955-1404

Circle 142 on Reader Service Card.

MDM-CHESS

Play online chess
with
GRAPHICS!

For the Apple II+, IIe, and IIc
40 and 80 columns

MDM-CHESS



MDM-Chess works with any modem and allows:
Chatting, board editing, game transfer, and full
screen graphics! Fast, and easy to modify.

Send Check/MO to Koan Enterprises
P.O. Box 422, Middleton, WI 53562
Add \$2 P & H (\$5 non-U.S.)

\$27.95

Apple is a Trademark of Apple Computer, Inc.

Circle 4 on Reader Service Card.



FORMSWORKS

- 100 legal/business forms to use with Appleworks
- Save hundreds of dollars on legal fees
- Save hours of typing/clerical effort
- Legal consultant:
Gerald Hecht, Esq
- 30 day free trial
- Master Card / Visa accepted

ONLY \$39.95
BRICKHOUSE SOFTWARE
PATTERSON, N.Y. 12563
(914) 878-2041

Circle 149 on Reader Service Card.

RIBBONS

DISCOUNT PRICES

NEW • TOP QUALITY • NO RELOADS
• COLORS

- *Apple Imagewriter \$3.85
- *C. Itoh ProWriter, 1-2 \$3.85
- *Diablo Hy-type II M/S \$2.95
- *Epson MX-70, MX-80, MX-82 \$2.95
- *Epson MX-100, RX-100, FX-100 ... \$4.95
- Epson LQ-800 \$7.95
- Epson LQ-1000 \$9.95
- IBM 4201 Proprietary \$4.95

*Colors—Add 75¢ Each/Red, Green, Blue, Brown
Terms: Send check or money order.
Add \$2.50 shipping & handling per dozen or any fraction.
MI res. add 4% sales tax.
P.O.'s accepted—Call for Approval.

Master-Media Supply

PO Box 705 • Howell, MI 48843

(517) 548-3620

We have ribbons for most all printers

Circle 6 on Reader Service Card.

APPLE COMPATIBLES LOWEST PRICES ANYWHERE!

- 64K/80 Column BD (IIe) \$ 39
- 256K/80 Column BD w/Software (IIe) \$109
- 80 Column BD-Videx Compatible (II+) \$ 49
- Z80 CP/M BD-
- Microsoft Compatible (II+/IIe) \$ 38
- 16K Ram BD-
- Expands II+ 48K to 64K (II+) \$ 35
- 128K Ram BD-
- Saturn (Titan) Compatible (II+/IIe) . \$ 89
- Graphic Parallel BD w/Cable (II+/IIe) \$ 45
- Super Serial BD-
- Great for Modems/Printers (II+/IIe) \$ 49
- Disk Drive H/H (Specify II+/IIe or IIc) \$129
- Numeric Keypad-16 Keys (IIe) \$ 35
- Cooling Fan w/Surge Protect (II+/IIe) \$ 29
- Joy Stick (Specify II+/IIe or IIc) \$ 15
- Joy Stick w/Large Fire Button
on Stick (Specify) \$ 25
- Super Mini Vacuum Cleaner
w/4 Attachments \$ 15

ONE YEAR WARRANTY ON ALL PRODUCTS
CALL/WRITE FOR COMPLETE LIST
ADD \$3 SHIPPING (Per ORDER, not per item)

NEXO DISTRIBUTION

914 East 8th Street, Suite 109
National City, CA 92050

(619) 474-3328 10am-6pm Mon-Fri

UNIV & SCHOOL P.O.'s WELCOME!
VISA/MC OKAY—C.O.D. ADD \$2.00

Circle 98 on Reader Service Card.

24 TERMINAL EMULATIONS

Softerm 2, an advanced communications package, includes 24 terminal emulations such as:

- DEC VT52, VT100, VT102
- IBM 3101-20 (block mode)
- HP 2622A • VIP7801, 7803
- DG D200 ... and many more.

Guaranteed Compatibility!!

Supports Script Files, Disk Capture, Softkeys, ProDos (floppy), DOS, CP/M, Pascal, & most vendor boards/modems.

Comes with Keyboard enhancer.

For the Apple II, II+, IIe, & IIc.

\$195 MC-VISA-COD

SOFTRONICS

1-800-225-8590

Call for information

(303) 593-9540 Telex 450236

Circle 96 on Reader Service Card.

Handicap with ARTIFICIAL INTELLIGENCE

TRACK WIZARD.

FOR
ALL
THOROUGHBRED
RACES



YOU
WILL
BE
AMAZED!

For the Apple II Plus, IIe, IIc

Call 1-800-628-2828 Ext. 810

\$69.95

Add \$2.00 Shipping & Handling
CA Orders Add 6.5% (\$4.55) Tax

Send check, Visa or MC number & expiration
date to:

DEFINER SOFTWARE

P.O. BOX 71565

LOS ANGELES, CA 90071

Dealer Inquiries Invited • Brochure Available

MONEY BACK GUARANTEE ... If not completely satisfied, return
it within 30 days for a full refund.

Circle 87 on Reader Service Card.

SAVE TIME with "SPEED UP"
for Home Accountant

NOW YOU CAN:

- Read/Write files **FOUR TIMES FASTER!**
- Search a thousand transactions in
LESS THAN 3 SECONDS!
- Load the Balance Sheet report program in
40 INSTEAD OF 240 SECONDS!
- Go directly from program to program!
- Use HA with a RAMDISK or HARD DISK!
- *** PLUS MUCH, MUCH, MORE *****

PHONE or MAIL your Order Today, or send
for a FREE BROCHURE!

For Orders or Brochure call

1-800-835-2246 x 131

For technical questions call

(612) 922-9212 7PM-10PM CST

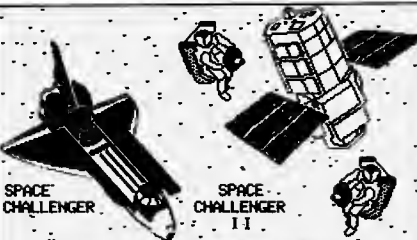
\$24 + \$2.50 S/H. VISA/MC Requires 64K.

DOS 3.3 Only. Satisfaction guaranteed.
(48K version also available).

SOFTWARE SOLUTIONS

5516 Merritt Circle, Edina, MN 55436

Circle 8 on Reader Service Card.



THAT'S RIGHT!! TWO EXTREMELY CHALLENGING GAMES FOR HALF THE PRICE
OF ONE. PLAY ALONE OR WITH UP TO FOUR FOR REAL COMPETITIVE FUN. MANY
HOURS OF ENJOYMENT FOR THE KIDS AND THE ENTIRE FAMILY. ... \$13.95

LODE RUNNER III: 150 NEW CHALLENGING DATA DISK. LODE RUNNER
LEVELS FOR EVERYONE TO CONQUER. LOWEST INCREDIBLE PRICE OF ... \$8.95

ADULTS ONLY: SPACE MADNESS. AN OUTER SPACE VERSION OF STRIP BLACK
JACK AND STRIP POKER. WELL, SPACE MADNESS IS ONE STEP BEYOND. UP TO SIX
PLAYERS FIGHT FOR TOTAL DOMINATION OF A GALAXY. CONQUER A WORLD FROM
ONE OF YOUR OPPONENTS, THEY MUST STRIP (OR SOMETHING ELSE) HOW MUCH
YOU WANT? ... \$13.95

BUY 2 OR MORE AND SAVE EVEN MORE. CALL FOR CURRENT PRICES.

CHIC

4002 WEST WEAVER RD. DEPT. 'A'
HAMPTON, VIRGINIA 23666
C.O.D. ORDERS CASH CALL:
(804) 827-8243

ORDER NOW SEND CHECK/
MONEY ORDER + \$1.00
S & H (VA RESIDENTS ADD
4% SALES TAX)

Circle 18 on Reader Service Card.

COMPANION CALCULATORS

Appleworks™ Enhancements
Financial, Standard, Hex
Calculators

Switch instantly between
Appleworks and Calculators.
Paste Results into Appleworks
PLUS

**Basic Programmer's
Calculator**

Needs: Apple IIe/IIc 128K or
more. ProDOS™/Basic System

Send \$14.95 + \$2 S & H

Genial Software, Inc.

P.O. Box 20281

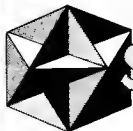
Indianapolis, IN 46220

Circle 78 on Reader Service Card.

Pascal Speed Up Systems

Our line of 6809 coprocessors offer **FASTER PASCAL, DISK CACHING**, & more. If you use Apple DOS 3.3, Apple PASCAL, or Microsoft CP/M we can put our system to work for you. We also speed up Apple CAD programs, including MATC-CAD & CADAPPLE.

For more information contact:



**STELLATION
TWO**

(805) 649-2833

P.O. BOX 696 OAKVIEW CA 93022

Apple is a trademark of Apple Computer inc., CADAPPLE is a trademark of T & W Systems, MATC-CAD by Milwaukee Area Tech. College

Circle 26 on Reader Service Card

**—BUY DIRECT AND SAVE—
FULLY APPLE COMPATIBLE**

Z-80 CP/M Card	\$ 39
80 Column Card w/Inverse (Videx compatible)	\$ 58
Autoterm 80 Col w/Softswitch & Inverse (Videx comp.)	\$ 68
Extended 80 Col w/64K Apple IIe	\$ 45
Disk Controller for 2 Drives	\$ 39
Parallel Printer Card w/Cable (Epson comp.)	\$ 37
Graphic Printer Card w/Cable (Parallel)	\$ 48
1200/300 Baud Modem External (Fully Hayes compatible)	\$175
Super Serial Card w/Cable	\$ 69
16K RAM Card w/Cable	\$ 37
128K RAM Card w/Software & Instructions (Titan, Saturn compatible)	\$110
Numeric Key Pad for Apple IIe	\$ 39
Super Cooling Fan w/2 outlets	
Lighted Switch, Surge/Filter	\$ 34
Joy Stick - Center Return or Free Floating (Hayes Mach III comp)	
Apple II/III, IIe, IIc & IBM	\$ 27
Diskette Storage Box w/Lock & Key Holds 100	\$ 15
Disk Notcher w/Guide, All Steel, Square Cut	\$ 8
Slim Disk Drive - Direct Drive w/Elec Sensor	
Super Duet, 1 Yr Warranty - Apple II+/IIe	\$120
Apple IIc	\$130

ASSEMBLED, TESTED & 6 MONTH WARRANTY
Shipping & Handling Under \$100/10% — Over \$100/5%
School & Institutional P.O. Accepted - Dealer Inv. Invited

HOURS: MON-FRI 9-6 EST

COMPUTER SUPPLY

P.O. BOX 164R, VALLEY STREAM, N.Y. 11582
(516) 239-1854

Circle 20 on Reader Service Card

GOT PROBLEMS?

0 0

GET HELP!

()

**CONSULT
DR. SHRINK**

DR. SHRINK is a psychologically oriented, interactive, self-help program created, developed and tested by an internationally known psychotherapist.

DR. SHRINK PROVIDES a structured program of QUESTIONS WHICH YOU ANSWER, plus PROCEDURES AND SUGGESTIONS which will assist you to systematically define and manage troublesome behaviors and feelings.

LEARN a fresh approach to problem solving with new techniques to enhance the quality of your life.

ACHIEVE new goals as you identify and successfully master difficulties from a different perspective.

ENJOY the fascinating process.

\$39.95 with money back guarantee

PSYCHE SOFTWARE INCORPORATED
P.O. BOX 917, STATION P., TORONTO,
ONTARIO, CANADA. M5S 2Z1

SATISFACTION GUARANTEED
or return within 14 days for a full
refund. (Less \$5 for postage, materials and handling)

For Apple II +, e, c, and
compatibles
Payable in U.S. dollars

Circle 68 on Reader Service Card

Reader Service

Page

* AST Research	1
54 Abacus Systems	138
75 American Mitac	2
* Applied Engineering	31, 36, 58, 59, 88, 89, 109, 111, 144, 145
* Batteries Included	113
229 Beagle Bros	119
87 Berliner Software	159
151 Big Red Apple Club	112
* Bone Frontier	158
149 Brickhouse Software	159
102 Bristen Press	132
* Business Computers of Peterborough	82, 83
60 Central Point Software	126
62 Central Point Software	127
63 Central Point Software	129
* Cheatsheet Products	128
227 Checkmate Technology	151
18 C.H.I.C.	159
168 Clipcapture	91
79 Coit Valley	155
124 CompuServe	72, 73
183 Computer Network	106
142 Computer Plus Company	158
20 Computer Supply	160
76 Computist	121
163 Core Concepts	40
* Covox	95
31 Creative Peripherals Unltd.	20
* Curtis Manufacturing	74
74 Davidson	45
19 Davidson	174
80 Dealer Supplies	158
184 Digital Vision	112
108 Diversified Software	133
275 Dresselhaus	141
170 Electric Transit	4
148 Electronic Arts	9
189 Enlightenment Software	131
11 Fastfind	158
132 First Class Peripherals	56
295 Funk Software	63
78 Genial Software	159
146 Golem Computers	134
66 H&E Computronics	CV3
254 H&M Disk Drives	143
228 Home Electronics	158
inCider Magazine	
AppleWorks Newsletter	64
hotCider Sub Ad	96
inCider Sub Ad	48
Moving	170
Xmas Sub Ad	32
University Micros	140
157 Int'l Apple Core	71
193 Intuit	103
121 K-12 MicroMedia Publishing	158
147 Kinemation	34
91 Kyan Software	154
94 Kyan Software	168
4 Koan Enterprises	159
28 Legend Industries	42
* Lightspeed Software	123
177 LiveSoft	122
6 MasterMedia Supply	159
* Microlon, Inc.	41

Reader Service

Page

206 Microprose	55
* Mindscape	27, 28, 29
251 MGR Software	168
55 Nat'l AppleWorks User Group	169
98 Nexco Distribution	159
100 Nibble Notch	170
110 Northeastern Software	162, 163
37 OKS	44
120 Orange Micro	7
122 Orange Micro	100
42 Origin Systems	15
52 PBI Software	157
* PC Network	66, 67
276 Pinpoint Publishing	114, 115
277 Pinpoint Publishing	116, 117
29 Precision Data Products	171
273 Precision International	26
* Preferred Computing	53
50 ProComp	158
49 Professor Jones	169
128 Programs Plus	98, 99
32 Pro-Tech-Tronics	104
111 Computer Direct	135, 165, 167
69 PSI/Pro. Software	49
68 Psyche Software	160
288 Q-Mar Group	33
287 Q-Mar Group	35
286 Q-Mar Group	37
16 Quinsept	140
* RC Systems	23
212 RC Systems	81
214 Rocky Mtn. Medical	24
165 Roger Coats	39
250 Roger Wagner	13
46 Russ Systems, Inc.	156
205 Scholastic Software	16, 17
86 Sensible Software	143
242 Sensible Software	141
246 Sensible Software	146
143 Silicon Express	43
218 Sir-Tech Software	21
96 Softronics	159
47 Software Simplified	171
8 Software Solutions	159
217 Software Touch, The	149
* Southern California Research Group	142
99 Spectrum Holobyte	172
* Spinnaker	75, 77, 79, 80
47 StatSoft	154
67 Stellation Two	140
26 Stellation Two	160
73 Street Electronics	CV4
239 Styleware	175
156 Sublogic Corp.	57
158 Sublogic Corp.	CV2
252 Telemax	158
* Telestar/Zoom Telephonics	38
39 ThirdWave Technology	147
140 Timeworks	3
195 University Software	139
264 Utilico Microware	122
15 Uptime	11
34 VIP Technologies	87
199 Wenger Corp.	25
109 Wesha Technologies	158

Spinnaker insert 80

For further information from our advertisers, please use the Reader Service card.

Advertising Sales: East Coast Office (603) 924-7138
West Coast Office (415) 328-3470

*This advertiser prefers to be contacted directly.

TO RECEIVE MORE INFORMATION

TEAR

out the perforated card.
Please print or type your
name and address where
indicated.

CIRCLE

the numbers on the card
that correspond to the
reader service numbers
on the advertisements that
interest you.

ORDER

a one year subscription to
inCider by circling 400 on
the card.

MAIL

the card with your check,
money order or U.S.
currency to:
inCider
Reader Service Dept.
P.O. Box 336
Dalton, MA 01227
Or, you may request
billing.

LOOK FOR

your subscription in
10 to 12 weeks.

REMEMBER

the postage is on us.

inCider

THE APPLE II MAGAZINE

☐ Mr. **November 1986**
☐ Mrs. This card valid until December 31, 1986
☐ Ms. Name _____
 Title _____
 Address _____
 City/State/Zip _____
 Telephone _____

1	6	11	16	21	151	156	161	166	171	301	305	311	318	321
2	7	12	17	22	152	157	162	167	172	302	307	312	317	322
3	8	13	18	23	153	158	163	168	173	303	308	313	318	323
4	9	14	19	24	154	159	164	169	174	304	309	314	319	324
5	10	15	20	25	155	160	165	170	175	305	310	315	320	325
26	31	36	41	46	176	181	186	191	196	326	331	336	341	346
27	32	37	42	47	177	182	187	192	197	327	332	337	342	347
28	33	38	43	48	178	183	188	193	198	328	333	338	343	348
29	34	39	44	49	179	184	189	194	199	329	334	339	344	349
30	35	40	45	50	180	185	190	195	200	330	335	340	345	350
51	56	61	66	71	201	206	211	216	221	351	356	361	366	371
52	57	62	67	72	202	207	212	217	222	352	357	362	367	372
53	58	63	68	73	203	208	213	218	223	353	358	363	368	373
54	59	64	69	74	204	209	214	219	224	354	359	364	369	374
55	60	65	70	75	205	210	215	220	225	355	360	365	370	375
76	81	86	91	96	226	231	236	241	246	376	381	386	391	396
77	82	87	92	97	227	232	237	242	247	377	382	387	392	397
78	83	88	93	98	228	233	238	243	248	378	383	388	393	398
79	84	89	94	99	229	234	239	244	249	379	384	389	394	399
80	85	90	95	100	230	235	240	245	250	380	385	390	395	400
101	106	111	116	121	251	256	261	266	271	To order 1 year of inCider, circle 400 on this card.				
102	107	112	117	122	252	257	262	267	272					
103	108	113	118	123	253	258	263	268	273					
104	109	114	119	124	254	259	264	269	274					
105	110	115	120	125	255	260	265	270	275					
126	131	136	141	146	276	281	286	291	296					
127	132	137	142	147	277	282	287	292	297					
128	133	138	143	148	278	283	288	293	298					
129	134	139	144	149	279	284	289	294	299					
130	135	140	145	150	280	285	290	295	300					

☐ Mr. **November 1986**
☐ Mrs. This card valid until December 31, 1986
☐ Ms. Name _____
 Title _____
 Address _____
 City/State/Zip _____
 Telephone _____

1	6	11	16	21	151	156	161	166	171	301	305	311	318	321
2	7	12	17	22	152	157	162	167	172	302	307	312	317	322
3	8	13	18	23	153	158	163	168	173	303	308	313	318	323
4	9	14	19	24	154	159	164	169	174	304	309	314	319	324
5	10	15	20	25	155	160	165	170	175	305	310	315	320	325
26	31	36	41	46	176	181	186	191	196	326	331	336	341	346
27	32	37	42	47	177	182	187	192	197	327	332	337	342	347
28	33	38	43	48	178	183	188	193	198	328	333	338	343	348
29	34	39	44	49	179	184	189	194	199	329	334	339	344	349
30	35	40	45	50	180	185	190	195	200	330	335	340	345	350
51	56	61	66	71	201	206	211	216	221	351	356	361	366	371
52	57	62	67	72	202	207	212	217	222	352	357	362	367	372
53	58	63	68	73	203	208	213	218	223	353	358	363	368	373
54	59	64	69	74	204	209	214	219	224	354	359	364	369	374
55	60	65	70	75	205	210	215	220	225	355	360	365	370	375
76	81	86	91	96	226	231	236	241	246	376	381	386	391	396
77	82	87	92	97	227	232	237	242	247	377	382	387	392	397
78	83	88	93	98	228	233	238	243	248	378	383	388	393	398
79	84	89	94	99	229	234	239	244	249	379	384	389	394	399
80	85	90	95	100	230	235	240	245	250	380	385	390	395	400
101	106	111	116	121	251	256	261	266	271	To order 1 year of inCider, circle 400 on this card.				
102	107	112	117	122	252	257	262	267	272					
103	108	113	118	123	253	258	263	268	273					
104	109	114	119	124	254	259	264	269	274					
105	110	115	120	125	255	260	265	270	275					
126	131	136	141	146	276	281	286	291	296					
127	132	137	142	147	277	282	287	292	297					
128	133	138	143	148	278	283	288	293	298					
129	134	139	144	149	279	284	289	294	299					
130	135	140	145	150	280	285	290	295	300					

► **"I've read every Apple magazine
and I'm down to one and that's
inCider. It's the best...I recommend
it to all my Apple II clients."**

Merlin Wittenberg
Educational Consultant
Chattanooga, TN

READER SERVICE

A. How many people, other than yourself, read your copy of *inCider*?
 1. ☐ One 2. ☐ Two 3. ☐ Three 4. ☐ None

B. Which of the following microcomputers do you own?
 1. ☐ Apple II or II+ 5. ☐ Macintosh
 2. ☐ Apple Ie 6. ☐ Apple compatible
 3. ☐ Apple Iic 7. ☐ Other _____
 4. ☐ Apple III

C. For which of the following applications do you most use your Apple computer?
 1. ☐ Business 2. ☐ Education 3. ☐ Home

D1. Did you request information on this card for:
 1. ☐ Purchasing decision 2. ☐ Reference only

D2. If you requested the information for business applications, how many employees are in your business?
 1. ☐ 1-10 2. ☐ 11-99 3. ☐ Over 100

E. Which of the following products do you plan to buy:
 1. ☐ Printer 4. ☐ RAM expansion card
 2. ☐ Monitor 5. ☐ Multi-function card
 3. ☐ Modem 6. ☐ Hard disk drive

F. Do you use AppleWorks?
 1. ☐ Yes 2. ☐ No

G. On a scale of 1 (no interest) to 4 (great interest), please rate your interest in the following *inCider* columns:
 1. ☐ inCider's View 7. ☐ Applesoft Adviser
 2. ☐ Game Room 8. ☐ News Line
 3. ☐ Right of Assembly 9. ☐ Status Report
 4. ☐ Reviews 10. ☐ Pascal Primer
 5. ☐ Editors' Choice 11. ☐ Apple Clinic
 6. ☐ New Products 12. ☐ AppleWorks in Action

H. If you are not a subscriber, please circle 399.
 I. If you would like a one year subscription to *inCider*, please circle 400 on the Reader Service Card. Each subscription costs \$24.97. (Canada & Mexico \$27.97, Foreign Surface \$44.97, one year only). Please allow 10-12 weeks for delivery.

**BUSINESS REPLY MAIL**

FIRST-CLASS MAIL PERMIT NO. 73 PETERBOROUGH, NH

POSTAGE WILL BE PAID BY ADDRESSEE

inCider
P.O. Box 336
Dalton, MA 01227

NO POSTAGE
 NECESSARY
 IF MAILED
 IN THE
 UNITED
 STATES

**BUSINESS REPLY MAIL**

FIRST-CLASS MAIL PERMIT NO. 73 PETERBOROUGH, NH

POSTAGE WILL BE PAID BY ADDRESSEE

inCider
P.O. Box 336
Dalton, MA 01227

NO POSTAGE
 NECESSARY
 IF MAILED
 IN THE
 UNITED
 STATES



TO RECEIVE MORE INFOR- MATION

TEAR

out the perforated card.
 Please print or type your
 name and address where
 indicated.

CIRCLE

the numbers on the card
 that correspond to the
 reader service numbers
 on the advertisements that
 interest you.

ORDER

a one year subscription to
inCider by circling 400 on
 the card.

MAIL

the card with your check,
 money order or U.S.
 currency to:
inCider
 Reader Service Dept.
 P.O. Box 336
 Dalton, MA 01227
 Or, you may request
 billing.

LOOK FOR

your subscription in
 10 to 12 weeks.

REMEMBER

the postage is on us.

►“I’ve read every Apple magazine
 and I’m down to one and that’s
inCider. It’s the best...I recommend
 it to all my Apple II clients.”

Merlin Wittenberg
 Educational Consultant
 Chattanooga, TN

inCider
 THE APPLE II MAGAZINE

GAME ROOM

by Brian J. Murphy

In *Game Room*, Brian Murphy tells us what's new in the world of Apple games. Look here for inCider's scoop on the latest fun.

Amnesia

★★★★

Electronic Arts

1820 Gateway Drive
San Mateo, CA 94404

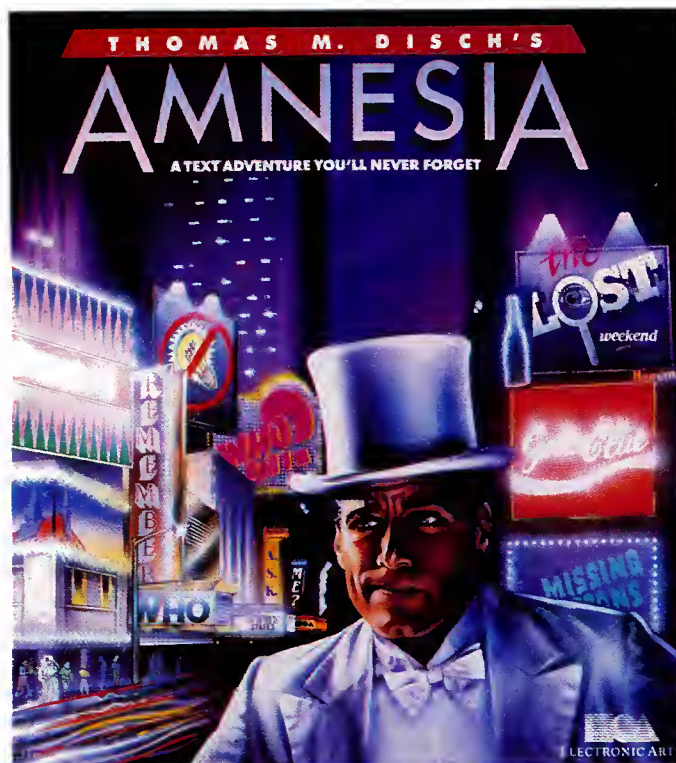
Text adventure
Any 64K Apple II, Applesoft,
one disk drive
\$44.95

Nineteen eighty-six has been a good year for game-software "firsts." In a radical break with tradition, Infocom published *Footlight*, its first game with graphics (see *Game Room*, October 1986, p. 129). Now Electronic Arts, creators of dazzling animated color-graphics games, has come out with *Amnesia*, its first all-text adventure—and the game is first-rate.

Amnesia may be the most complex adventure game to date—the program requires two double-sided disks. It's certainly the first to employ a vocabulary of 1700 words. With its sophisticated parser, *Amnesia* lets you issue commands in near-conversational English.

The emphasis in *Amnesia* is on realistic detail. As game time passes, stores and services open and close; you get hungry and sleepy; you find and run out of money, converse with characters, and explore, explore, explore. Four thousand locations on 650 simulated streets, as well as an entire subway system, help *Amnesia*'s Manhattan come alive.

As in any adventure, it's the story that counts. Because the author is Thomas M. Disch, Campbell Award



Electronic Arts' first text adventure: Manhattan mystery with a twist.

winner and master science-fiction storyteller, *Amnesia*'s story line is unusually strong.

The game gets off to a nightmarish start, then, through innumerable twists and turns of plot, gives you terror, tension, comedy, and mystery. Few adventures offer this strong a combination of story, atmosphere, and just plain good writing.

Lost in the City

The game's title, *Amnesia*, perfectly summarizes the theme of this adventure. Waking up in a hotel room in midtown Manhattan, you look at yourself in the mirror and receive a mind-numbing shock. The face staring back at you belongs to a complete stranger; you can't even remember your own name.

To complement the horror of feeling mentally naked, you find that you're physically naked as well. A quick look around yields

nothing but the basics of any hotel room—a bed and sheets, a bathroom, a phone, an empty closet, a chest of drawers with a Gideon Bible, and a TV—no clothes, no cash, no change, not even a subway token. The only anomaly is an Apple II computer.

To begin, keep the first rule of adventure gaming in mind: Search everything, try everything, and take everything that isn't nailed down. Make some calls from the phone in your room; turn on your TV and switch channels. If you painstakingly search the contents of the entire room, you'll come up with some objects and clues to get you started. Here's a hint: Where in the hotel can you go wearing a sheet?

The answer to that question (and many others) lies in *Amnesia*'s documentation. (The game manual is also vital in explaining the mechanics of play for first-time adventurers.) It includes a guide to the Sun-

derland Hotel, the seedy establishment in which you find yourself as the game begins.

You'll also find a map of Manhattan from 110th Street down, with a subway guide on the reverse, and an address book containing 17 entries and phone numbers—your most important tool. You'll have to call each number, then follow the resulting instructions to travel around the city—an interesting, and hazardous, expedition. (Use your cross-street indexer to find some of these places.)

Where you wind up will depend on your ability to develop a feel for *Amnesia*. If you can psych yourself up to think like Disch, you'll discover that he doesn't like easy solutions, superficial exploration, or unwary travelers. You could end up safely married to a pretty young woman on a sheep ranch in Australia, or begging for spare change on Times Square. The possibilities also include sudden death at any number of locations, as well as the optimal ending—finding out who you really are and living to tell the tale. Whatever happens, *Amnesia* will be a fascinating, challenging experience. ■

Brian Murphy is anxious to learn what you think of the current state of computer games. Write him at inCider, Elm Street, Peterborough, NH 03458, and let him know your opinion.

inCider's Ratings

- ★★★★ Excellent
- ★★★ Above average
- ★★ Good enough
- ★ Not up to standards
- ☆ The empty set

CALL TOLL FREE 1-800-382-2242

NEW THE SOFTWARE WE WILL BEAT

7 Trap Falls Rd. Shelton, Connecticut 06484 (See Below)

- Tap our unmatched selection and inventory of software/hardware for the Mac and Apple (as well as the IBM PC and Commodore Amiga).
- School and corporate purchase orders are welcomed. CALL 1-800-874-1108.
- Special/rush orders. If something you need is not listed, hard to find, or needed in a hurry, CALL 1-800-874-1108.
- Order Status. CALL (203) 375-3860.
- Ask for System Sales when ordering a complete system.
- FREQUENT PURCHASER PROGRAM. Any repeat customer will automatically receive \$1 off any order he or she places with us. Please mention to your operator that you are a repeat customer. We value your continuing business. Send in \$1,000 worth of invoices (representing previous purchases) and you will receive a coupon worth 1% off any future purchase. With \$5,000 worth of invoices, receive a coupon worth 5% off any future purchase.
- No additional charges for credit card orders.
- Convenient hours. 7 days/week: 9AM-11 PM EST.
- FREE AIR EXPRESS SHIPPING. Purchase \$150 or more of software and far no additional charge we will ship your products by air courier. Mention this to your operator as you place your order.
- FURTHER DISCOUNTS BY MAIL. Circle the items in our ad you want, send the ad in with the coupon below and receive \$1.50 off each item! Cut out a competitor's ad with a lower price and we will give you \$1 off his price (subject to the conditions below).

COPY PROGRAMS / BOARDS

Back It Up III	40.00
CIA Files	35.00
Copy II+	18.00
Copy Master II 128K W/GR Omp	90.00
Edd IV Plus II/II+/IIE	40.00
Edd IV Plus II/II+/IIE/Uni Disk	99.00
Edsmith 6.0	56.00
Wildcard II	69.00

BUSINESS

ADVANCED LOGIC SYSTEMS	
The Handlers Package	65.00
List or Word Handler	37.00
Spellworks	27.00
APPLE	
Appleworks	CALL
Applewriter II	CALL
Apple Access	CALL
Quickfile	CALL
APPLIED SOFTWARE TECHNOLOGY	
Versiform	46.00
ARTSCI	
Magic Office Systems	146.50
Magic Calc 3.3	59.00
Magic Windows	88.00
ASHTON TATE	
Obase II	299.00
BPI	
Gen. Acctg. Ar, Ap, Gl, Pay	193.00
Gen. Acctg. Ar, Ap, Gl, Pay Pro Do	208.00
BRODERBUND	
Bank Street Filer	40.00
Bank Street Speller	40.00
Bank Street Writer 64K or 128K	40.00
Bank Street Mailer	40.00
CBS SOFTWARE	
Stockpak II	88.00
CONTINENTAL SOFTWARE	
Home Accountant IIC	38.00
Home Accountant IIE	38.00
Tax Advantage	36.00
DOW JONES SOFTWARE	
Investor's Workshop	78.00
Market Analyzer or Microscope	181.00
Mkt. Mgr. or Spreadsheet Link	130.00
Membership Kit	18.50
ELECTRONIC ARTS	
Financial Cookbook	31.00
Cut & Paste	21.50
FUNK	
Sideways	31.00
Sideways Pro Dos	36.00
NAYDEN SOFTWARE	
The Writer	24.00
HOWARDSON	
Real Estate Analyzer III	179.00
INTERNATIONAL SOLUTIONS	
Mouse Budget	37.00
Mouse Calc	83.00
Mouse Desk	23.00
Mouse Word	67.00
Mouse File	CALL
INTUIT	
Quickdraw	49.00
KENSINGTON	
Format II Enhanced	87.00
LIVING VIDEOTEXT	
Think Tank II/III	77.50
MEGAHAUS	
Megaworks	73.00
Reportworks	73.00
Thinkworks	73.00
MANZANITA	
Business Accountant System Man	68.00
Business Accountant GL/APAR/I	208.00
Business Accountant Payroll	245.00
Adv. Business Acct. System Man	68.00
Adv. Business Acct. GL/APAR/I	280.00
Adv. Business Acct. Payroll	280.00
Businessworks Syst. Manager	64.00
Businessworks GL/APAR/IN	225.00
Businessworks Payroll	255.00
MECA	
Managing Your Money	104.00
MICROPRO	
Wordstar	179.00

MICROSOFT	
Multiplan	60.00
MONOGRAM	
Dollars & Sense IIE	68.00
Dollars & Sense IIC	68.00
Forecast	35.00
NDLO PRESS	
Will Writer	28.00
PBI SOFTWARE	
Graphworks	57.00
Jeeves	35.00
PEACHTREE	
Back to Basics	97.00
PINPOINT PUBLISHING	
Pinpoint	34.50
Pinpoint Spelling Checker	34.50
Pinpoint Toolkit	CALL
PRACTICORP	
Practical II	25.50
PRECISION SOFTWARE	
Superbase	53.50
QUARK	
Word Juggler w/ Jaxcheck	58.00
Catalyst IIE	58.00
ROGER WAGNER PUBLISHING	
Mouse Write	71.00
The White Choice	26.00
SATELLITE SOFTWARE	
Word Perfect	78.50
SCARBOROUGH	
Net Worth	46.00
SENSIBLE SOFTWARE	
Bookends or Sensible Speller	64.00
The Graphics Department	68.00
Sensible Grammar	54.00
Report Card	31.00
SIERRA-ON-LINE	
The General Manager II	128.00
Hamward/Speller Bundle	41.00
Screenwriter IIE	76.00
Hamward Filer	41.00
SIMON & SCHUSTER	
JK Jassers Income Tax	46.00
JK Jassers Money Manager	46.00
SORCIM	
Supercalc 3A	98.00
SOFTWARE PUBLISHING	
PFS: Access	43.50
PFS: File at Graph	68.50
PFS: Report or Write	68.50
PFS: File & Report	72.00
PFS: Workmates	138.50
STATE OF THE ART	
Electric Checkbook	58.00
STONEWARE	
OB Master 4 Plus	164.00
OB Bus. Pack or Most Bus Team	184.00
OB Master Business Writer	84.00
TIMEWORKS	
Silvia Porter's Financial Plan	58.00
Swiftcalc with Sideways	104.00
TURNING POINT	
Time Is Money	57.00
UNISON	
Primmaster	28.00
PINPOINT	
Micro Cookbook II/III	22.00
VISTORP	
Flashcalc	54.00

BRODERBUND

Dazzle Draw	35.00
Fantavision	28.50
Print Shop	28.50
Print Shop Companion	23.50
Graphics Library 1	14.50
Graphics Library 2	14.50
Graphics Library 3	14.50
Refill Paper Pack	12.50
DATA TRANSFORMS	
Fontix	51.00
Font Packs 1-13	11.75
ELECTRONIC ARTS	
Movie Maker	25.50
PENGUIN	
New Complete Graphics System	46.00
Graphics Magician	34.50
Cal Graphics	21.00
SENSIBLE SOFTWARE	
Graphics Department	64.00
SOFTWARE PUBLISHING	
PFS: Graph Dos or Pro Dos	68.50
SPINNAKER	
Delta Drawing	25.00
SPRINGBOARD	
Clip Art Collection Vol. 1	16.50
Clip Art Collection Vol. 2	20.50
Graphics Expander	23.00
Newsroom	31.00
WEEKLY READER	
PIC Builder	20.50
Zoom Graphics	37.50

BANTAM BOOKS

Road Rally USA	23.00
Scarsdale Diet	23.00
BARRONS	
Barrons SAT	35.00
BRAINPOWER	
Chips	23.00
Thinkfast	23.00
BRODERBUND	
Science Toolkit	35.00
CBS	
Adventure Master	19.00
Body in Focus	23.00
Dinosaur Dig	23.00
Mastering the SAT	57.00
America Coast to Coast	23.00
Boren's Learning Bridge	43.00
Forecast or I-Rate	28.00
DAVIDSON AND ASSOCIATES	
Alge Blast	26.00
Speed Reader II	36.00
WORD ATTACK, MATRILASTER	
Or Spell It	26.00
All Davidson Data Disks	11.50
Classmate	26.00
DESIGNWARE	
Spellchecker or Spellokazam	23.00
States & Traits and European N	24.00
Body Transparent or Mission AL	24.00
Grammar Examiner	24.00
Remember	41.00
DLM	
Alien Addition or Alligator MI	18.00
Meteor Mult. or Minus Mission	18.00
Demolition Division or Oregon	18.00
Spelling Whiz or Word Invasion	18.00
Freddie's Puzzles	18.00
Create With Garfield	18.00
EDU-WARE/ PEACHTREE	
Compu Road	15.50
SAT Word Attack Skills	15.50
Spelling Bee Games	20.50
Algebra 1, 2, 3, or 4	20.50
Algebra 5 & 6	25.50
Writing Skills 1, 2, 3, 4, 5	20.50
Hands on Basic	25.00
Introduction to Counting	18.50
Fractions or Decimals	20.50
FISHER PRICE	
Alpha Build	15.50
Peter Rabbit Reading	23.50
MARCOURT BRACE JOVANOVIĆ	
Harcourt SAT	44.50
Harcourt GRE or ACT	50.50
GRIDLIER	
Science Island or Treasure Hunt	23.50
Easy Graph or Friendly Filer	23.50
Educate	29.50
NAYDEN	
Word Challenge	10.50
LEARNING COMPANY	
Rocky's Boots or Robot Odyssey	28.50
Number Stumper or Reader Rabbi	23.00
Magic Spells or Word Spinner	20.00
Bumble Games or Bumble Plot	23.00
Gertie's Puzzles or Secrets	25.50
Addition Magician	20.00
Juggles Rainbow	17.50
Maptown Math	23.50
MAGNUM	
Super Speed Reading	30.00
MECC	
Elementary Series (Each)	29.00
Math or Health Series (Each)	29.00
MICROSOFT	
Typing Tutor II	16.00
MILLIKEN	
Math Sequences (Each)	20.00
Milliken Word Processor	41.00
MINISCAPE	
Perfect Score SAT	41.00
Keyboard Cadet	23.00
Luscher Profile	23.00
SCARBOROUGH SYSTEMS	
Build a Book About You	47.00
Boston Computer Diet	47.00
Masterpiece's Writing Wizard	23.00
Masterpiece's Filer	23.00
Masterpiece's New and Improved	23.00
Run for the Money	22.00
Picture Writer	23.00

UTILITY SOFTWARE / LANGUAGES

BEAGLE BROTHERS

Apple Mechanic	15.00
Beagle Basic	17.75
D-Code	20.50
Disk Quick	15.50
Dos Boss	12.75
Double Take	17.75
Extra K	20.50
Fat Cat	17.75
Flex Text	15.00
GPLE	26.00
I/O Silver	15.75
Macroworks	18.00
Mini Fix	14.75
Font Mechanic	14.75
Big U	17.75
Pro Byter	17.75
Phonto Dos	14.75
Silicon Salad	12.75
Triple Pump	20.50
Type Faces	11.75
Utility Kit	14.75

BORLAND

Turbo Pascal	38.00
Turbo Database Toolbox	30.50
Turbo Tutor	20.50
KENSINGTON MICROWARE	
System Saver	58.50
LAZERWARE	
Lisa V2.6	52.50
MICROSOFT	
AppleSoft Compiler	101.00
PERFECT DATA	
Perfect Data Head Cleaning Kit	8.00
ROGER WAGNER	
Marlin	38.00
Marlin Gamma	63.00
Marlin Pro	56.00
Visible 6502	CALL
VIDEX	
Ultratrim w/SS Imv.	190.00
Video 7 RGB Interface IIE	115.00
Video 7 RGB Interface IIC	83.00

ANIMATION / GRAPHICS SOFTWARE

ACTIVISION	
Game Maker	29.00
BAUDVILLE	
Actors and Actions	17.00
Blazing Paddles	26.50
Heroes and Villains	17.50
Pix II	28.00
Prince	41.00
Shape Library 1, 2 or 3	12.00
Take 1	33.00
BEAGLE BROTHERS	
Beagle Graphics	30.50
Frame Up	14.50
Alpha Plot	20.50
Flex Text	14.50
Shape Mechanic	20.50

EDUCATIONAL

ADDISON WESLEY	
Smart Eyes	35.00
APPLE	
Logo II	CALL

Send coupon and list of items desired to:
DISCOUNT BY MAIL DEPARTMENT
 7 Trap Falls Rd. Shelton CT 06484

To be eligible for the \$1.50 per item discount you must:
 1. Fill out all items. 2. Send in our ad with the items you have ordered.

Name _____

Address _____ (Include Company Name)

City _____ State _____ Zip _____

Phone No. at home address _____

Check form of payment
 Visa MasterCard C.O.D. Personal Check
 Certified Check Money Order

Card No. _____ Exp. Date _____

Computer Model _____

Personal and company checks allow 3 weeks to clear. For faster delivery, send cashier's check, certified check, or money order. Shipping—Software (\$3.00 minimum). Shipping—Hardware (please call 203-375-3860). COD—Add an additional \$2.00. Alaska, Hawaii, Canada, PO, APO, and FPO \$5.00 minimum. Foreign orders—\$15.00 minimum and 15% of all orders over \$100. Mastercard and Visa (please include card no. and expiration date). Connecticut residents add 7.5% sales tax. Prices subject to change without notice. All returns must have a return authorization number. Call 203-375-3860 to obtain one before returning goods for replacement. Defective merchandise replaced with same item only. We do not guarantee compatibility. All sales are final. "Comparable advertised price" does not include typographical errors on the part of other vendors or prices that do not reflect higher shipping costs, credit card charges, or membership fees. The \$1 off offer only applies to items where Northeastern's price is not already the lowest. Final judgment remains with the manager on duty.

ASTER

ANY COMPARABLE ADVERTISED PRICE BY \$1

SCHOLASTIC WIZWARE		QATASOFT		RANDOM HOUSE		KRAFT		IQ-1500		TELECOMMUNICATION SOFTWARE	
Fact and Fiction Toolkit	22.50	Alternate Reality	23.50	Alpine Encounter	23.00	Kraft Joystick IIC or IIE	24.00	IQ-10	CALL	APPLE COMPUTER	
Story Tree or Story Maker	21.00	Bruce Lee or Conan	21.00	SEGA		Kraft Quick Stick IIC	48.00	IQ-20	CALL	Apple Access	CALL
Turtle Tracks or Agent USA	23.00	Karanis Rift	23.00	Frogger 3-Deep or Super Zaxxon	20.00	STEINWATT		AP-80 Imagewriter	CALL	COMPUSERVE	
Operation Frog or Logic Builder	23.00	Zorra or the Goonies	21.00	Spy Hunter or Duck Rogers	26.00	Stadtwatt 4 Outlet	27.50	JUKI	CALL	Compuserve Starter Kit	19.00
Logo Rabbit or Kids at Work	14.00	Mr. Do	21.00	Tapper or Star Trek	26.00	Stadtwatt 6 Outlet	30.00	Juki 5500 Color	648.00	DOW JONES	
SENSIBLE SOFTWARE		ELECTRONIC ARTS		SIR TECH		Stadtwatt 8 Outlet	33.00	Juki 6100	30.00	Spreadsheet Link	130.00
Report Card	32.00	Adventure Construction Set	30.00	SIERRA DR LINE				Juki 6300	33.00	Ow Jones Starter Kit	23.00
Simon AND SCHUSTER		Age of Adventure	21.50	King's Quest I or II	29.00	MCT		MANHESMAN TALLY	CALL	HAYES	
Chem Lab	23.00	Archon	24.00	The Black Cauldron	23.00	MCT Speed Demon	136.00	MT-85	365.00	Smartcom I	68.00
Typing Tutor III	29.00	Archon II or Skyfox	24.00	Championship Boxing	20.00	STREET ELECTRONICS		MT-86	425.00	Hoyes Terminal Program	57.00
SPINNAKER SOFTWARE		Autoduel	35.00	SIMON AND SCHUSTER		Echo II Plus	92.50	NEC INFORMATION SYSTEMS	CALL	MICROSTUFF	
Fraction Fever or Face Maker	14.50	Bard's Tale or Reach for the Stars	27.00	Frogger 3-Deep	20.00	Clicker IIC	65.00	All News	CALL	Crossstalk	98.00
File and Report or Spreadsheet	34.00	Moebius	36.00	Spy Hunter, Tapper or Star Trek	25.50	TITAN TECHNOLOGIES		OKI DATA	CALL	QUARK	
Snooper Troops 1 or 2	19.00	Carriers at War	31.00	Paper Airplane Const. Set	23.00	Accelerator IIE	203.00	92P	315.00	Tarmus	67.00
Story Machine or Grandma's Hou	14.50	Europe Ablaze	31.00	Wizardry I	28.00	SIR TECH		192P	CALL	SOFTRONICS	
Kindergarten or Kids on Keys	14.50	Music Construction Set	24.00	Wizardry II	20.00	SWEET MICRO		193P	CALL	Software Publishing	44.00
Spinnaker Word Processor	CALL	One-On-One	23.50	Wizardry III	23.00	Mockingboard A or B	64.00	193P Imagewriter	CALL	SOURCE TELECOMPUTING	
Alphabet Zoo or Kidwriter	17.50	Phiball Construction Set	21.00	Wizardry	14.50	Mockingboard C	113.00	Okimate 20 Color	CALL	Source Subscription Kit	29.00
In Search Of	19.00	Seven Cities of Gold	24.00	SPECTRUM HOLDBYTE	20.00	Mockingboard 0	123.00	PANASONIC	CALL	UNITED SOFTWARE INDUSTRIES	
Adventure Creator	17.50	Wilderness	31.00					KXP 1080	198.00	ASCII Express Pro (Dos or Pro)	74.00
Trains	17.50	Chessmaster 2000	24.00	DISK DRIVERS				KXP 1091	238.00		
Counting Parade	17.50	Murder on the Zindemur	13.00	STRATEGIC SIMULATIONS				KXP 1092	CALL		
Sum Ducks	17.50	Super Boulder Dash	21.00	Baltic 85 or Gemstone Warrior	20.00	APPLE		KXP 3131	CALL		
Delta Drawing	23.00	Skyfax	24.00	Battalion Commander	23.00	Unidisk w/Catalyst	CALL	KXP 3151	395.00		
Homework Helper: Math Problems	23.00	Lords of Conquest	21.00	Battle Group	22.00	Duo Disk w/Acc. Kit	CALL	QUAME	430.00		
Homework Helper: Writing	23.00	Ogre	31.00	Field of Fire	22.00	IIC ADD ON	CALL	Letter Pro 20	185.00		
SPRINGBOARD		EPYX		Geopolitique 1990	23.00	AMERICAN MICRO		SILVER REED	185.00		
Early Games or Piece of Cake	20.00	Boltblazer	23.00	Germany 1985 or Carrier Force	34.00	A2 143K	147.00	EXP 500P	365.00		
Make a Match or Fraction Facts	16.00	Eldon	23.00	Imperium Galacticum or Broodis	23.00	Simline IIE	147.00	EXP 550P	365.00		
Mask Parade	21.50	Rescue on Fractulus	23.00	Nam	22.00	Simline IIC	155.00	EXP 800	CALL		
Easy As ABC	21.50	Summer Games I or II	23.00	North Atlantic 86	34.00	Controller Card	45.00	STAR MICRONICS	CALL		
Mathbusters	19.00	Temple of Asphar Trilogy	23.00	Norway 85	20.00	QUARK		NK 10	CALL		
Maths Maestro	19.00	Winter Games	23.00	Objective Kursk or Phantasia	23.00	QC-10 Hard Disk w/Catalyst	CALL	SG 15	CALL		
Rainbow Painter	19.00	World's Greatest Baseball Game	20.00	Phantasia II	22.00	QC-20 Hard Disk w/Catalyst	1109.00	SG 10	335.00		
Puzzle Master	19.00	World's Greatest Football Game	23.00	Question	29.00	PRINTER INTERFACES		SG 15	445.00		
TERRAPIN		HAYOEN		RF 1985	20.00	ORANGE MICRO		SR 10	479.00		
Terrapin Logo	51.00	Sargon III	29.00	Reforged 88 or Kampfgruppe	34.00	Hat Link	45.00	SR 15	579.00		
Terrapin Logo 10 Pack	155.00	Inca	29.00	Six Gun Shootout	21.50	Buffered Grappler	129.00	TOSHIBA			
TIMEWORKS		INFOCOM		USAAF	31.00	Grappler Plus	69.00	P351	1075.00		
Evelyn Wood Dynamic Reader	40.00	A Mind Forever Voyaging	25.00	War in Russia	46.00	TEXTPRINT		P341	795.00		
WEEKLY READER		Ballyhoo	22.50	Wizard's Crown	22.00	THIRDWARE					
Exploring Tables and Graphs	19.00	Curthoots or Zark I	22.50	SUB LOGIC		Print II (Serial or Parallel)	123.00	MULTIFUNCTION BOARDS			
Sticky Bear Series (Each)	23.00	Spellbreaker	27.00	Flight Simulator II	30.50	THIRDWARE		APPLIED ENGINEERING			
ENTERTAINMENT		Foobitzky	22.50	Night Mission Pinball	22.00	Fingerprint Plus	85.00	Trans Warp Accelerator	CALL		
		Wishbringer	22.50	SYNAPSE SOFTWARE		MONITORS		RAMworks II	CALL		
		Trinity	CALL	Brimstone	26.00	APPLE		RGB Option	97.00		
		Deadline, Suspended or Starcr	28.00	Mindwheel or Essex	26.00	Color Monitor IIE or IIC	CALL	Z RAM IIC	CALL		
		Hitchhiker's Guide to the Gola	22.50	TELARIUM		Color 300	205.00	System Clock	59.50		
		Planetfall or Enchanter	22.50	Orangemicro or Shadowkeep	23.00	Color 600	380.00	Viewmaster	107.00		
		Sorcerer, Suspect or Infidel	26.00	Farenheit 451 or Amazon	23.00	Video 300A Amber	115.00	Timemaster H.Q.	99.00		
		Witness or Seasaltaker	22.50	Rendezvous with Rama	23.00	Video 300G Green	110.00	85R Option	38.00		
		Zark II or Zark III	26.00	Nine Princes in Amber	23.00	DVM III	115.00	Z-80 Plus	107.00		
		MICROPROSE		Perry Mason	23.00	PRINCETON		APRICORN			
		Crusade in Europe	23.00	WINDHAM CLASSICS		HX-9	CALL	Apricorn 16K Ram Card	65.00		
		Decision in the Desert	23.00	Below the Boat	18.00	HX-12	CALL	Apricorn 64K Extend It	45.00		
		F-15 Strike Eagle or Solo Flig	20.00	Swiss Family Robinson	18.00	RGB Interface	CALL	AST RESEARCH			
		Gunship	20.00	Treasure Island	18.00	ACCESSORIES/TURBO BOARDS		AST Micro Star (10MG HO W/8.11)	1750.00		
		Silent Service	20.00	Wizard of Oz	18.00	APPLE COMPUTER		AST Multi I/O	138.00		
		NATO Commander	20.00	BLANK MEDIA		ImageWriter II w/acc. Kit	CALL	CHECKMATE TECHNOLOGIES			
		Conflict in Vietnam	24.00			ImageWriter 15" w/acc. Kit	CALL	Checkmate Zee-80A Card	68.00		
		Acrojet	20.00					Checkmate IIE-80 Ram Card	59.00		
		MICRO LEAGUE SPORTS						Cherkmate Multitram C (512K)	CALL		
		Micro League Baseball	23.00					Checkmate Multitram IIE	135.00		
		Micro League Managers Disk	23.00					INFORMATION APPLIANCE, INC.			
		Micro League Team Disk 1985	11.50					Swiftcard	68.00		
		MINDSCAPE						PRACTICAL PERIPHERALS			
		Crossword Magic	29.00					Quadram	58.00		
		Holley Project	26.00					Quadram Extended Multifunction	155.00		
		James Bond View to a Kill	23.00					Quadram Buffered Serial Int. (64K)	97.00		
		Rambo	23.00					Quadram Parallel Interface	73.00		
		Steven King The Mist	23.00					Quadram Parallel Card w/Graphi	73.00		
		Voodoo Island	32.00					Quadram 80 Column 64K Card	97.00		
		Deja Vu	23.00					Quadram Multi-Core Board w/256	175.00		
		Forbidden Castle	23.00					Quadram E-Ram 80	96.00		
		Rocket	26.00					STREET ELECTRONICS			
		ONE STEP SOFTWARE						Alphabits II	77.00		
		Golf's Best Pinhurst	29.00					Livewire w/lock	67.00		
		Golf's Best St Andrews	29.00					Business Card Serial	133.00		
		ORIGIN SYSTEMS						Business Card Parallel	154.00		
		Auto Quest	36.00					THUNDERWARE			
		Moebius	36.00					Thunderclock Plus	103.00		
		Ultima III	33.00					CREATIVE PERIPHERALS			
		Ultima IV	33.00					Time Trax IIE or IIC	78.00		
		PENGUIN									
		Covered Mirror	20.00								
		Crimson Crown	20.00								
		Ootapoo	20.00								
		The Quest or Ring Quest	20.00								
		Nyxipho or Transylvania	20.00								
		POLARWARE									
		Murder by the Dozen or Felony	15.00								
		Sword of Kadosh	20.00								

HINTS/TECHNIQUES

Apple users know that there's always an easier way to get the job done. A shortcut here, an elegant twist there. That's what *Hints/Techniques* is all about. It's an information swap for readers who want to share their programming pointers, DOS tips, hardware secrets, AppleWorks applications, WPL enhancements, and all those other insights that make you go "Aha!" in the night. So read on and see if you don't find just the solution you've been looking for.

Binary-to-Text Revision

by Thomas L. Muller

Binary-to-Text Converter (Hints/Techniques, June 1986, p. 115) produces text files from binary without requiring a second program to regenerate the latter. Readers have pinpointed two conditions, though (in addition to the quirk mentioned in the June article), under which this conversion program doesn't function properly:

1) A binary file above memory location 32767 yields an ILLEGAL QUANTITY ERROR message. The original program uses the variable AR% to keep track of the memory location it's currently converting, but integer variables can't exceed 32767. To fix this bug, change AR% to AR.

2) When the binary file loads into memory just below HIMEM or LOWMEM, the areas in which your Apple stores data, those data may overwrite the binary file. Binary-to-Text Converter produces no error message, but the resulting text file is scrambled. Adjust HIMEM to accommodate both your binary file and your data.

The revised program (see **Listing 1**) corrects these problems and includes a few enhancements that make it easier to use with very large files—even up to 30,000 bytes. ■

Write to Thomas Muller at 156 Starr Road, Newark, DE 19711.

Word-Processor Data Base

by Arthur Rex Rogers

Sometimes you need the power of a data base, but for only a small

Listing 1. Revised Binary-to-Text Converter.

```
10 REM THIS ROUTINE CONVERTS A BINARY FILE TO A TEXT FILE
    THAT CAN BE EXEC'ED.
20 LC = PEEK (103) + 256 * PEEK (104)
30 HIMEM: LC + 2000
40 DIM H$(16),A$(2)
50 D$ = CHR$(4)
60 INPUT "BINARY FILE NAME? ";FILE$
70 PRINT D$;"MONICO"
80 PRINT D$;"BLOAD ";FILE$
90 TFILE$ = "T-" + FILE$
100 AD = PEEK (43634) + 256 * PEEK (43635)
110 LN = PEEK (43616) + 256 * PEEK (43617)
120 IF ((AD < LC) AND (AD + LN) < LC) OR (AD > (LC + 2000)) THEN
    GOTO 140
130 PRINT "BINARY FILE OCCUPIES MEMORY NEEDED BY": PRINT "TH
    IS PROGRAM. RE-BOOT DOS, THEN TRY": PRINT "POKE 103,1 :
    POKE 104,64 : POKE 16384,0": PRINT "THEN RE-LOAD THIS P
    ROGRAM AND TRY AGAIN.": END
140 PRINT "INSERT NEW DISK IF DESIRED AND HIT A KEY": GET A$
    : PRINT
150 PRINT D$;"OPEN ";TFILE$
160 PRINT D$;"DELETE ";TFILE$
170 PRINT D$;"OPEN ";TFILE$
180 PRINT D$;"WRITE ";TFILE$
190 PRINT : PRINT "CALL -151"
200 FOR J = 0 TO LN - 1
210 I = I + 1
220 IF I = 1 THEN GOSUB 340
230 Y% = PEEK (J + AD)
240 N2% = Y% / 16
250 N1% = Y% - N2% * 16
260 IF N1% < 10 THEN H1$ = STR$(N1%)
270 IF N1% > 9 THEN H1$ = CHR$(N1% + 55)
280 IF N2% < 10 THEN H2$ = STR$(N2%)
290 IF N2% > 9 THEN H2$ = CHR$(N2% + 55)
300 H$(I) = H2$ + H1$
310 IF I = 16 OR J = LN - 1 THEN GOSUB 470
320 NEXT J
330 GOTO 500
340 AR = AD + J
350 A$(2) = AR / 256
360 A$(1) = AR - A$(2) * 256
370 HA$ = "": FOR L = 1 TO 2
380 N2% = A$(L) / 16
390 N1% = A$(L) - N2% * 16
400 IF N1% < 10 THEN H1$ = STR$(N1%)
410 IF N1% > 9 THEN H1$ = CHR$(N1% + 55)
420 IF N2% < 10 THEN H2$ = STR$(N2%)
430 IF N2% > 9 THEN H2$ = CHR$(N2% + 55)
440 HA$ = H2$ + H1$ + HA$
450 NEXT L
460 RETURN
470 PRINT HA$;"::": FOR K = 1 TO 16: PRINT " ";H$(K);: NEXT
    K: PRINT
480 I = 0: FOR K = 1 TO 16:H$(K) = "": NEXT K
490 RETURN
500 PRINT "3D0G"
510 PRINT "PRINT"; CHR$(34);"INSERT NEW DISK IF DESIRED. TH
    EN TYPE"; CHR$(34)
515 PRINT "PRINT"; CHR$(34);"BSAVE ";FILE$;","A";AD;","L";LN;
    CHR$(34)
520 PRINT : PRINT D$;"CLOSE ";TFILE$
530 PRINT : PRINT D$;"NOMONICO": PRINT CHR$(7);"FINISHED":
    GOTO 540
540 END
```


To Order

Call **APPLE** Call

(312) 382-5050 Software Sale (312) 382-5050

Computer Direct offers a large selection at affordable prices.

Access

Z4013 Action Pack\$14.95

Artsci

Z4278 Magic Memory.....\$39.95

Z4279 Magicalc.....\$49.95

Z4326 Magic Window.....\$49.95

Accolade

Z4218 Hardball.....\$18.95

Z4219 Law Of The West.....\$18.95

Z4220 Psi Trading Co.....\$18.95

Z4221 Fight Night.....\$18.95

Z4222 Dam Buster.....\$18.95

Activision

Z4196 Ghostbusters.....\$21.95

Z4125 Great American Rd. Race \$22.95

Z4126 Master Of The Lamps ...\$20.95

Z4237 Borrowed Time.....\$21.95

Z4234 Hacker.....\$24.95

Blue Chip

Z4287 Millionaire.....\$22.95

Z4288 Baron.....\$22.95

Z4289 Tycoon.....\$22.95

Z4290 Squire.....\$22.95

Sub-Logic

Z4280 Flight Simulator.....\$29.95

Z4281 Night Mission Pinball ...\$21.95

Springboard

Z4208 Newsroom.....\$29.95

Z4018 Clip Art 1.....\$15.95

Z4019 Clip Art 2.....\$20.95

Z4199 Certificate Maker.....\$30.95

Z4332 Graphics Expander.....\$21.95

Broderbund

Z4036 Bank Street Writer.....\$37.95

Z4038 Champ Lode Runner....\$19.95

Z4039 Karateka.....\$19.95

Z4168 Print Shop.....\$25.95

Z4169 Graphics Library 1.....\$14.95

Z4170 Graphics Library 2.....\$14.95

Z4171 Graphics Library 3.....\$14.95

Z4205 Print Shop Companion..\$21.95

Z4045 Where Is Carmen

Sandiego?.....\$22.95

Random House

Z4081 Alpine Encounter.....\$19.95

Z4082 Charlie Brown's ABC's ..\$19.95

Z4083 Garfield Double Dares...\$19.95

Z4084 Garfield, Eat Your Words\$19.95

Z4191 Snoopy Writer.....\$19.95

Z4216 Snoopy's Skywriter

Scrambler.....\$19.95

Designware

Z4046 Algebra.....\$19.95

Z4047 Creature Creator.....\$9.95

Z4048 The Body Transparent...\$23.95

Z4049 Crypto Cube.....\$19.95

Z4050 European Nations &

Locations.....\$23.95

Z4051 The Grammar Examiner ..\$23.95

Z4052 Math Maze.....\$22.95

Z4053 Mission Algebra.....\$23.95

Z4054 Remember!.....\$39.95

Z4055 Spellagraph.....\$22.95

Z4056 Spellakazam.....\$17.95

Z4057 Spellicopter.....\$22.95

Z4058 Spelling & Reading Primer\$22.95

Z4059 States & Traits.....\$23.95

Z4060 Trap-a-zoid.....\$22.95

Electronic Arts

Z4132 Carriers At War.....\$30.95

Z4133 Dr. J & Larry Bird 1 on 1 ..\$9.95

Z4134 Financial Cookbook.....\$27.95

Z4135 Hard Hat Mack.....\$9.95

Z4136 Murder On The

Zinderneuf.....\$9.95

Z4138 Reach For The Stars.....\$26.95

Z4139 7 Cities of Gold.....\$9.95

Z4140 Skyfox.....\$22.95

Epyx

Z4141 Ballblazer.....\$19.95

Z4142 Impossible Mission.....\$14.95

Z4143 Pitstop 2.....\$19.95

Z4144 Robots of Dawn.....\$14.95

Z4145 Summer Games 2.....\$22.95

Z4146 World's Greatest Baseball\$19.95

Z4241 Winter Games.....\$22.95

Z4242 Summer Olympic Games..\$22.95

Z4243 Movie Monster Game ...\$24.95

Z4243 World's Greatest Football \$22.95

Fisher Price

Z4229 Peter Rabbit Reading ...\$22.95

Z4230 1st Men in Moon Math ...\$22.95

Z4231 Jungle Book Reading....\$22.95

Mindscape

Z4183 Stephen King The Mist ...\$22.95

Z4184 James Bond: A View to a

Kill.....\$22.95

Z4185 Crossword Magic.....\$27.95

Z4186 Bank Street Storybook ...\$22.95

Z4187 The Halley Project.....\$24.95

Z4212 Racter.....\$24.95

Z4213 Rambo First Blood.....\$22.95

Z4214 The American Challenge..\$24.95

Z4215 The Perfect Score.....\$39.95

Strategic Simulations Inc.

Z4245 Nam.....\$21.95

Z4246 Colonial Conquest.....\$21.95

Z4248 Battle of Antietam.....\$26.95

Z4251 U.S.A.A.F.....\$30.95

Z4252 Panzer Granadier.....\$21.95

Spectrum Holobyte

Z4209 Gato.....\$19.95

Spinnaker

Z4100 Adventure Creator.....\$16.95

Z4102 Alphabet Zoo.....\$16.95

Z4108 Kids on Keys.....\$13.95

Z4104 Delta Drawing.....\$22.95

Z4105 Facemaker.....\$13.95

Z4106 Fraction Fever.....\$13.95

Z4109 Kidwriter.....\$16.95

Z4110 Kindercomp.....\$13.95

Z4111 Story Machine.....\$13.95

Z4112 Sum Ducks.....\$19.95

Z4206 Homework Helper Math..\$22.95

Z4223 Rhymes & Riddles.....\$12.95

Z4224 Trains.....\$16.95

Z4225 Grandma's House.....\$13.95

Z4226 Hey Diddle Diddle.....\$12.95

Z4227 Snooper Troops 1.....\$12.95

Z4228 Snooper Troops 2.....\$12.95

Z4103 Counting Parade.....\$16.95

Z4107 The Most Amazing Thing \$18.95

Z4207 Homework Helper

Writing.....\$22.95

Telarium

Z4070 Amazon.....\$12.95

Z4071 Dragonworld.....\$12.95

Z4072 Fahrenheit 451.....\$12.95

Z4327 Rendezvous With Rama ..\$12.95

Z4073 9 Princes in Amber.....\$22.95

Z4074 Perry Mason.....\$22.95

Windham Classics

Z4076 Alice in Wonderland ...\$21.95

Z4077 Below the Root.....\$21.95

Z4078 Swiss Family Robinson ..\$21.95

Z4079 Wizard of Oz.....\$21.95

Z4080 Treasure Island.....\$21.95

Weekly Reader Software

Z4114 Stickybear ABC.....\$22.95

Z4117 Stickybear Math.....\$22.95

Z4118 Stickybear Numbers.....\$22.95

Z4119 Stickybear Opposites....\$22.95

Z4120 Stickybear Reading.....\$22.95

Z4121 Stickybear Shapes.....\$22.95

Z4122 Stickybear Spellgrabber ..\$22.95

Z4176 Stickybear Printer.....\$22.95

Z4174 Stickybear Typing.....\$22.95

Z4123 Stickybear Town Builder ..\$22.95

Add \$3.00 for shipping, handling, and insurance. Illinois residents please add 6 1/2 % sales tax. Add \$6.00 for CANADA, PUERTO RICO, HAWAII, ALASKA, APO-FPO orders. All orders must be in U.S. Dollars. WE DO NOT EXPORT TO OTHER COUNTRIES EXCEPT CANADA. Enclose Cashier Check, Money Order or Personal Check. Allow 14 days for delivery, 2 to 7 days for phone orders, 1 day express mail. Prices & Availability subject to change without notice.

VISA — MASTER CARD — C.O.D.

C.O.D. on phone orders only.

Computer Direct

We Love Our Customers

22292 N. Pepper Rd., Barrington, Illinois 60010

312/382-5050 to order

Figure 1. Word-processor data base divided into fields for inventory information.

Stock no.	Material	Description	Retail	Quan.	Cost	Ext.
<-9sp>	<-9sp>	<-28 spaces>	<-7sp>	<-6sp>	<-7sp>	<-7sp>

Figure 2. Section of the inventory data base.

C. COMPONENTS						
Stock no.	Material	Description >rtl>quan>whsl>ext>				
660001	SS	EAR WIRES	0	86	.1865	0
660010	AG	BEAD EAR WIRES	0	13	0.47	0
660033	SS	EAR POST DOUBLE NOTCH	0	100	.1274	0
990-758	SS	7MM 6PR EZ MOUNT CAST	0	2	2.22	0
X	SS	2MM BEADS	0	73	.05	0
X	SS	3MM BEADS	0	2	.065	0
AB996-018	SS	MAPLE LEAVES pair	0	8	.99	0

Figure 3. Inventory data base after calculation of item values and total.

C. COMPONENTS						
Stock no.	Material	Description >rtl>quan>whsl>ext>				
660001	SS	EAR WIRES	0	86	.1865	16.04
660010	AG	BEAD EAR WIRES	0	13	0.47	6.22
660033	SS	EAR POST DOUBLE NOTCH	0	100	.1274	12.74
990-758	SS	7MM 6PR EZ MOUNT CAST	0	2	2.22	4.44
X	SS	2MM BEADS	0	73	.05	3.65
X	SS	3MM BEADS	0	2	.065	.13
AB996-018	SS	MAPLE LEAVES pair	0	8	.99	7.92

Figure 4. Inventory data base after generation of price list.

C. COMPONENTS					
Stock no.	Material	Description	Price	Quantity	
660001	SS	EAR WIRES	.23	86	
660010	AG	BEAD EAR WIRES	.59	13	
660033	SS	EAR POST DOUBLE NOTCH	.16	100	
990-758	SS	7MM 6PR EZ MOUNT CAST	2.78	2	
X	SS	2MM BEADS	.06	73	
X	SS	3MM BEADS	.08	2	
AB996-018	SS	MAPLE LEAVES pair	1.24	8	

Listing 2. Inventory Calculator.

```

10 HOME :D$ = CHR$(4): PRINT "READING INVENTORY INTO MEMOR
   Y "
20 X = 0:TX = 0:EX = 0: DIM X$(400):EX$ = "":TX$ = ""
30 PRINT D$;"OPEN MAIN.INV": PRINT D$;"READ MAIN.INV"
40 INPUT X$(X)
50 IF LEFT$(X$(X),3) = "EOF" THEN X = X - 1: GOTO 70
60 X = X + 1: GOTO 40
70 PRINT D$;"CLOSE": HOME
90 IF Z = X THEN GOSUB 1100
100 IF LEN(X$(Z)) < 72 THEN GOTO 170
110 X$(Z) = LEFT$(X$(Z),71)
130 EX = INT (EX * 10 ^ 2 + .5) / INT (10 ^ 2 + .5)
140 TX = TX + EX
150 EX$ = STR$(EX): GOSUB 1000
160 X$(Z) = X$(Z) + EX$
170 PRINT X$(Z)
180 NEXT
190 PRINT D$;"OPEN EXTEND.INV": PRINT D$;"WRITE EXTEND.INV"
200 FOR Y = 0 TO X
210 PRINT X$(Y)
220 NEXT
230 PRINT D$;"CLOSE"
300 HOME : PRINT X$(X)
999 END

```

Listing continued.

amount of information. Using your word processor and a small file-management program written in BASIC, you can handle a number of everyday recordkeeping tasks.

For example, my wife maintains records for her jewelry business, which has a stock of about 300 items. That small quantity hardly justifies buying an expensive inventory program, although we do have to track inventory for tax purposes. My wife also prefers to use her sales slips and invoices to keep a running inventory. Some calculation is required to arrive at a total value for taxes; she also needs a retail price list based on a standard markup from cost.

If your needs are similar, consider the following solution. Using your word processor to maintain a data base and write a text file, you can access the text file from BASIC, extract the figures you need from each line, perform the calculations you need, and reformat them for another file, which you can later print with your word processor.

You must define each line in your data base at a set length, then segment it into fields that contain information on each item in the inventory (see **Figure 1**). Each line can then be considered a string, as defined in BASIC, and can be manipulated by a BASIC program. (One empty space between fields improves readability.)

First consider the amount of room you'll need to adequately describe each inventory item; we decided 80 columns would be enough for our application. The number of characters per record is limited only by your printer; using compressed mode, you may be able to print as many as 132 characters or more per line, provided your word processor can generate lines that long.

When designing the format of your data base, try to fit one record per line. If you need longer records, stretch the fields of the first part of the record so that the data fit across the entire length of your word processor's line. Then start the second line with a new field in the first column, but make sure that a character (not one or more spaces) is always stored in the first column; if not, the processor will probably format out those initial spaces, thus upsetting the design of the data base.

Figure 2 shows a small part of the inventory data base and demonstrates how the various fields fit within the framework outlined in **Figure 1**. The

Famous National Brand

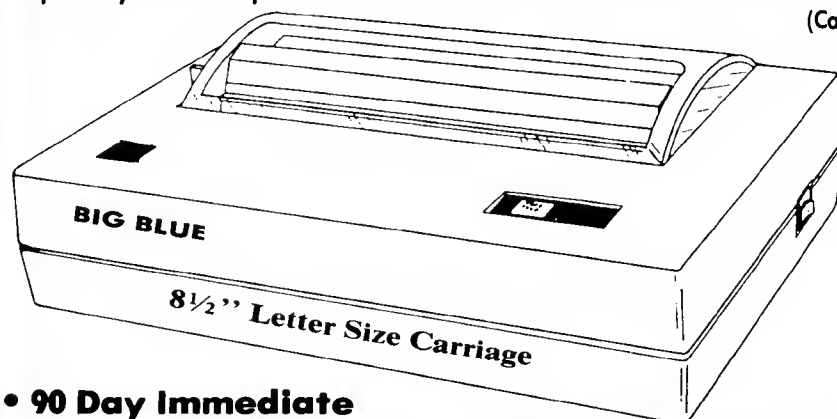
Commodore® Atari® Apple® IBM®

**We Like this Printer so much
We Bought Out the Factory.**

\$39.95 80 Column Printer Sale

• Word Processing • Program Listings • Graphics • Quiet Operation • Upper and Lower case • All points addressable Graphics • Underline • Enlarged • Much much More

Complete your set up with a Printer Stand **SALE \$14.95** and Complete Printer Care Kit **SALE \$19.95**
(Care Kit will add time to your printers life span.)



Super Print Quality

This printer was made by Canon® for the IBM PC and PCjr. The Big Blue printer comes ready to hook up to the serial port of the IBM® PC jr. Plus with low cost adapter cables you can connect the Big Blue printer to the Commodore® 64, 128, IBM® PC, IBM® XT, IBM® AT, IBM Compatibles, Apple® II, IIe, IIC, Apple Compatibles, Atari®, plus many more.

• **90 Day Immediate Replacement Warranty** • **15 Day Free Trial-Satisfaction or Money Back**

Now you can have a full fledged 8 1/2" letter size 80 column printer for less than the cost of a large box of paper. This printer uses advanced dot matrix, heat transfer technology to print upper and lower case (with true lower descenders), underline, enhanced, all points addressable graphics (works with Printshop) plus More. Print out pictures, program listings, wordprocessing pages, graphics and more. Perfect for the homeowner or student and definitely affordable. Fantastic Printer at an unbeatable price. List \$199.00 Sale \$39.95

Paper (2 Rolls) List \$19.95 Sale \$5.95

Intelligent Commodore Interface— Allows you to connect the Big Blue printer to the printer port of the Commodore 64 and 128 computer. Print Commodore graphics, use Printshop, Word processors and more... List \$49.95 Sale \$19.95

Intelligent Atari Interface— Allows you to connect the Big Blue printer to Atari computers (except 1200). Print Atari graphics, Printshop, word processors, and more... List \$49.95 Sale \$19.95

RS-232 Adapter— Adapts the Big Blue printer to be used with any IBM® PC, AT, XT, PCjr. Apple® II series RS-232 port. List \$19.95 Sale \$9.95

Laser128, Apple IIC interface— List \$24.95 Sale \$12.95

Printer Stand List \$24.95 Sale \$14.95 - **Complete Printer Care Kit** List \$29.95 Sale \$19.95

IBM, Apple, Canon, Commodore, Atari are trademarks of International Business Machines, Apple Computer, Canon Inc. Commodore Business Machines, Atari Inc. Respectively.

Add \$7.50 for shipping, handling and insurance. Illinois residents please add 6 1/2% tax. Add \$15.00 for CANADA, PUERTO RICO, HAWAII, ALASKA and APO-FPO orders. All orders must be in U.S. dollars. WE DO NOT EXPORT TO OTHER COUNTRIES, EXCEPT CANADA. Enclose Cashier Check, Money Order or Personal Check. Allow 14 days for delivery, 2 to 7 days for phone orders, 1 day express mail! Prices & Availability subject to change without notice.
VISA — MASTER CARD — C.O.D. C.O.D. on phone orders only

COMPUTER DIRECT

We Love Our Customers

22292 N. Pepper Rd., Barrington, Ill. 60010

312/382-5050 to order

Circle 111 on Reader Service Card.

Listing continued.

```

1000 FOR Y = 1 TO LEN (EX$): IF MID$ (EX$,Y,1) < > "." THEN
    NEXT Y
1010 A = LEN (EX$) - Y: IF A = 1 THEN EX$ = EX$ + "0"
1020 IF A < 1 THEN EX$ = EX$ + ".00"
1030 IF LEN (EX$) < > 8 THEN EX$ = " " + EX$: GOTO 1030
1040 RETURN
1100 EX$ = STR$ (TX): GOSUB 1000:TX$ = EX$
1110 X$(Z) = "          TOTAL VALUE OF INVENTORY IS $" + TX$:
    RETURN

```

End of listing.

Listing 3. Price List.

```

10 REM ---PROGRAM TO CALCULATE RETAIL PRICE AND MAKE A FILE
    OF THE INFORMATION
20 HOME :X = 0:TX = 0:EX = 0: DIM X$(400):EX$ = "":TX$ = ""
30 D$ = CHR$ (4): PRINT D$;"OPEN MAIN.INV": PRINT D$;"READ M
    AIN.INV"
40 INPUT X$(X): IF LEFT$ (X$(X),3) = "EOF" THEN GOTO 170
50 IF LEFT$ (X$(X),5) < > "Stock" THEN GOTO 70
60 X$(X) = LEFT$ (X$(X),31) + "          Price Quan
    tity"
70 IF LEN (X$(X)) < 72 THEN GOTO 150
80 X$(X) = LEFT$ (X$(X),71)
90 IF VAL ( MID$ (X$(X),49,7)) < > 0 THEN X$(X) = LEFT$ (
    X$(X),63): GOTO 150
100 QN$ = MID$ (X$(X),57,6):CO = ( VAL ( MID$ (X$(X),64,7)))
110 RTL = CO / .8:EX = INT (RTL * 10 ^ 2 + .5) / INT (10 ^
    2 + .5)

```

Listing continued.

heading "C. COMPONENTS" is a major division within the inventory and is assigned a letter, the only purpose of which is to start the line. Column headings are shortened so that the calculating program can disregard them as it passes through the file. Fields to be calculated are represented by zeros just to show their placement.

Listing 2 is a BASIC program that computes the value of each item in the inventory and the total; **Listing 3** generates a price list for a 20 percent markup. You can use these two programs as a basis from which to write your own custom applications. **Figure 3** shows the data base from **Figure 2** after processing by the program in **Listing 2**; **Figure 4** shows data after processing by **Listing 3**.

Using your word processor as a data base, while unorthodox, is quite practical for some types of data. Its search and editing functions make maintaining a data base easy. BASIC's power of string manipulation allows much more complicated operations

Kyan

Call A.P.P.L.E., July, 1986

Kyan Pascal goes the distance. It runs under ProDOS and includes a full screen text editor, native code compiler, macro assembler, Pascal extensions, and more. It's ideal for learning Pascal and writing sophisticated programs. And, at \$69.95, it's a real bargain.

Kyan Pascal is also available with KIX, Kyan's new UNIX-like shell for ProDOS. **Kyan Pascal PLUS**, at \$99.95, is a must for the intermediate or advanced programmer who can use the increased capabilities of a high-powered operating environment.

With Kyan you don't have to be an expert to add state-of-the-art features to your programs. It's easy with Kyan's programming toolkits.

- | | |
|----------------------------------|-------------------------------|
| I. System Utilities (\$49.95) | II. Mouse Text (\$49.95) |
| III. Advanced Graphics (\$49.95) | IV. TurtleGraphics (\$29.95) |
| V. MouseGraphics (\$69.95) | VI. Code Optimizer (\$149.95) |

To Order Call:

415-626-2080

Send Check/Money Order to:

Kyan Software Inc. Dept. 9
1850 Union Street #183
San Francisco, CA 94123

Enclose \$4.50 for shipping; \$15.00 outside North America; Calif. residents add 6.5% sales tax; Kyan Pascal requires 64K of memory and one disk drive.

MODEM MGR™

\$49⁹⁰

plus \$3 ship/hand
 plus tax (Calif. only)

- A new modem communications program
- For Apple II +, IIc, IIe, enhanced IIe
- Both DOS 3.3 and ProDOS support
- Supports most serial and modem cards
- Supports most smart and non-smart modems
- Fast operation (110 to 19200 baud)
- Text capture and auto disk-save
- Screen capture (snapshot)
- Full-screen editor
- Full- or split-screen display with block send (for CB, chat, packet radio)
- Macro script files for auto log-on
- Programmable function keys
- XMODEM error-free file transfer
- Supports Apple or Videx 80-column card
- On-screen time-of-day or elapsed-time display (with some clock cards)
- Unattended mode with password protection
- Emulates DEC VT-52, DG D200, others
- Supports most printer cards
- Choice of carrier or "smart" modem control
- Not copy-protected
- Available direct only. Send check to:

MGR
SOFTWARE

Suite 101
 305 So. State College Blvd.
 Anaheim, CA 92806
 (714) 993-0294

Apple, ProDOS are trademarks of Apple Computer Inc.

Listing continued.

```

130 EX$ = STR$(EX): GOSUB 1000
140 X$(X) = LEFT$(X$(X),47) + EX$ + " " + QN$
150 PRINT X$(X)
160 X = X + 1: GOTO 40
170 PRINT D$;"CLOSE"
200 PRINT D$;"OPEN PRICE.LIST.INV": PRINT D$;"WRITE PRICE.LI
    ST.INV"
210 FOR Y = 0 TO X
220 PRINT X$(Y)
230 NEXT
240 PRINT D$;"CLOSE"
250 HOME : PRINT "THAT'S IT. ALL DONE."
999 END
1000 FOR Y = 1 TO LEN (EX$): IF MID$(EX$,Y,1) < > "." THEN
    NEXT Y
1010 A = LEN (EX$) - Y: IF A = 1 THEN EX$ = EX$ + "0"
1020 IF A < 1 THEN EX$ = EX$ + ".00"
1030 IF LEN (EX$) < > 8 THEN EX$ = " " + EX$: GOTO 1030
1040 RETURN

```

End of listing.

than you see in these two programs: What you do with your word-processor data base is limited by only your imagination. ■

Write to Arthur Rex Rogers at 1010 Mary Anne Drive, Riverton, WY 82501.

Recovering WordStar Data by P.P. Ong

If you're a frequent user of Micro-Pro's WordStar, you know that feeling of frustration when your Apple hangs with a section of your document in RAM that you haven't saved to disk

and can't recover. Since Apple WordStar operates under CP/M, it inherits all the idiosyncrasies associated with that operating system: If you swap data disks, if a disk is write-protected or full, if some of its sectors are bad or the drive head is dirty, you run the risk of hanging the program. If you can get back to CP/M DOS while your data are still in memory, though, there's a cure for your WordStar woes.

A WordStar document resides in a range of contiguous RAM, the exact location of which depends not on whether your system is an Apple II, II Plus, or IIe, but on the particular versions of CP/M and WordStar you're using. The **Table** shows memory ranges allocated to text for four different configurations. Corresponding memory size expressed in pages of 256 bytes each is shown in parentheses.

If your file is too large to fit into available memory, WordStar automatically saves to disk those portions of your document not in RAM; you therefore need concern yourself only with the sections still in RAM and not

PROF JONES
SUMMER/FALL 1986

ORDER LINE
(208) 342-6939

THOROUGHBRED
GREYHOUND
TROTTER
LOTTERY/LOTTO
FOOTBALL
BASKETBALL
OFFICE HOURS
M-F 9 AM - 5 PM
SAT 9 AM - 1 PM
(Mountain Standard Time)

FREE CATALOG
1940 W. STATE
BOISE, IDAHO 83702

AMEX

PROFESSIONAL HANDICAPPING SYSTEMS

Professor Picks Football™
\$99.95, with win/loss power ratings \$149.95; Professional Series™ \$199.95

Expanded Lottery/Lotto Analysis
Lottery: 3-4 digits \$79.95; Lotto: max. of 99 digits \$99.95; Enhanced Lottery/ Lotto \$129.95

PC-3 Portable Computer (4k)
Choice of Thoroughbred/Greyhound/Trotter Gold Edition™ software. \$249.95

Model 100 Portable Computer (32k)
Choice of Thoroughbred/Greyhound/Trotter Gold Edition™ software with Master Bettor™ \$649.95

PROFESSIONAL S E R I E S

PROFESSIONAL SERIES™ (Tho/Grey/Trot)
The all new Professional Series™ represents the most advanced handicapping software available.

Analysis Module™
Complete bet analysis highlights this basic Professional Series™ module. Full 50 tracks/kennels/etc. \$249.95

Factor Value/Multiple Regression Module™
Factor Value Weighting highlights this addition module™ \$149.95

Data Base Manager Module™
Automatic storage of last 11 races highlights this module. (\$99.95 with Factor Value Module) \$149.95

GOLD EDITION™ (Tho/Grey/Trot)
The classic Gold Edition™ from Prof. Jones offers flexibility, results, and ease of use.

Gold Edition™	\$159.95
Enhanced Gold Edition™	\$199.95
Limited Gold Edition™	\$299.95
Ultra Edition™	\$399.95

Handicapper's Bulletin Board now available
VHS Training Tapes now available

Terms: Free shipping all software. Add \$600 COD / \$600 UPS Blue / \$900 Out-of-country / ID residents add 5% / 3 weeks personal checks / cash price only add 2% Visa, MC, AMEX. Prices subject to change.

WANT TO KNOW MORE ABOUT AppleWorks?

The National AppleWorks Users Group (NAUG) is an association of AppleWorks users. NAUG members share information, hints, suggestions and ideas about AppleWorks through a monthly newsletter. Here is a partial list of articles that appeared in the September issue of the **Forum**:

- How to find "lost" AppleWorks files.
- How to use non-Apple printers with AppleWorks.
- How to configure AppleWorks for different interface cards.
- How to eliminate unwanted characters on your printouts.
- How to run AppleWorks on a hard disk network.
- How to save & use standard formats & boilerplate text.
- How to use dates in a data base.
- How to navigate around large spreadsheets.
- ...And lots more.

NAUG shares an electronic bulletin board and maintains a library of public domain disks. A one-year NAUG membership costs \$24. We will refund the balance of your dues if you are ever dissatisfied.

National AppleWorks Users Group Box 87453, Canton, MI 48187

Enclosed is \$24 for a one-year NAUG membership.
Enclosed is \$3 for a sample NAUG newsletter.

Name: _____
Address: _____
City: _____ State: _____ Zip: _____
Phone: _____

InCider 11

WE SUPPORT AppleWorks USERS

AppleWorks is a trademark of Apple Computer, Inc. NAUG is not affiliated with Apple Computer, Inc.

yet saved. Also note that for a long file, the starting memory location may slide down by a few pages from the figure listed in the **Table**. (This is inconsequential, since you can easily clean up the unwanted section above the top of the file after a disk save.)

You can retrieve the RAM section of your document with CP/M's Data Debugging Tool (DDT) and the following steps:

- 1) First, stay cool, but keep your computer warm: *Don't* cut off its power. Then try all possible means to get back to CP/M DOS—you should see the A> or B> prompt. If you don't, insert a CP/M master disk (containing the same version of DOS your WordStar uses) into drive B as well, and type control-C. Try the reset key as a last resort.
- 2) Rectify your system error (such as cleaning your disk head).
- 3) Insert a good, uncluttered CP/M-formatted data disk into drive B.
- 4) If necessary, type A: to set the default drive to A.

Table. Resident locations of WordStar data file.

WS Version	CP/M Configuration	
	CP/M 56K	CP/M 60K
3.3	\$846D-\$BAFF (55)	\$846D-\$CAFF (71)
3.0	\$7849-\$BAFF (67)	\$7849-\$CAFF (83)

5) Insert a CP/M system disk containing DDT.COM into drive A and type DDT. For convenience, simply add DDT to your WordStar disk so that it's always there when needed. If DDT program execution is successful, you'll see a hyphen-sign (-) prompt.

6) Type D846D,CAFF to display memory from \$846D to \$CAFF. Your document is intact and is displayed in ASCII code on the right-hand side of your screen. (For this and the following steps, I refer specifically to WordStar version 3.3 with CP/M 60K

of RAM. If you use WordStar 3.0, replace the hex value \$846D with \$7849; if you use CP/M 56K, replace \$CAFF with \$BAFF.)

7) Let your document scroll up the screen until you see the end. Press control-S to halt scrolling, and make a note of the exact end of your document—say, \$wxyz. The length of your document in number of pages (256 bytes each) is therefore given approximately by the hex value \$mn = (\$wx - \$84 + \$01). You can convert this page number to decimal value d

IT'S LIKE

FREE DISKETTES



Your 5 1/4" single side disks are usable on the other side. You paid for one side, why not use the other... **IT'S FREE!**

Nibble Notch will **open** your **new** disk. It's easy... won't harm existing data. Try it!

nibble notch I

For Apple, Franklin, Commodore & Atari (w/Atari Drives); square notch.

only \$14.95*

nibble notch II

For all other computers; square notch & index hole.

only \$21.90*

DISK OPTIMIZER II ©

Apple II Series Software

Pro DOS • DOS 3.3 • Pascal

Examines your **new** disk, locks out bad sectors and **certifies it 100% ERROR-FREE** in 30 seconds or less! Also checks drive speed...and more!

SUPER SAVER PACKAGE

Nibble Notch I and Disk Optimizer Combo (Optimizer alone reg. \$24.95)

\$29.95* FOR BOTH!

QUALITY DISKETTES

low as **99c**

* add \$2 (\$5 frgn)

for P & H. PA Res.

add 6% Sales Tax

Toll Free 1-800-642-2536

1-215-828-8600

OR SEND CHECK OR MONEY ORDER TO:

1020 Ford Rd & 2 West
West Conshohocken, PA 19428




MOVING?

SUBSCRIPTION PROBLEMS?

Get help with your subscription by calling our new toll free number:

1-800-227-5782

between 9 a.m. and 5 p.m. EST,
Monday-Friday

If possible, please have your mailing label in front of you as well as your cancelled check or credit card statement if you are having problems with payment.

If moving, please give both your old address and new address.

*New York State residents call 1-800-732-9119

with the formula $d = m \cdot 16 + n$.

8) Press the escape key twice followed by a carriage return to terminate scrolling.

9) Type M846D,wxyz,100 to move your data to memory locations starting at \$100 to prepare them for saving.

10) Type control-C to terminate DDT and reenter DOS.

11) Type SAVE d B:filename, where d is the decimal value computed in step 6, and filename is the actual name of the document file in which you want to save your data.

If you don't like dealing with hex numbers, you can skip steps 5, 6, and 7. Replace step 8 by typing M846D, CAFF,100. If your document is single-spaced, replace d in step 11 with $(10 \cdot N)$, where N is the number of pages of your document still in memory. If your document is double-spaced, use $d = (5 \cdot N)$. A less elegant, but easier, way (and a safe one) is to always set d equal to the number given in parentheses in the Table, and

save the entire block of memory set aside for WordStar files as a single file.

Congratulations—you've just recovered your lost file. Get back to WordStar, tidy up the aftermath, and complete your document. But be sure to keep WordStar's quirks in mind and handle your disks with care. ■

Write to P.P. Ong at the Department of Physics, National University of Singapore, Kent Ridge, Singapore 0511.

Applesoft Decimals

by Vincent D. O'Connor

Applesoft has a number of features that make it a convenient, effective version of BASIC with which to work, but you may also have to compensate for certain shortcomings. One of these is a problem common among home computers: Applesoft, like many other versions of BASIC, can't handle decimals accurately.

Let's look at a few of those circumstances in which you'll run into prob-

lems with decimal computation:

1) *Exponentiation.* Numbers raised to a power don't calculate precisely, and in complex formulas can cause errors. (For example, when you type PRINT 3^4 and press return, you'll get an answer of 81.0000001, instead of 81.) To avoid errors, use Applesoft's integer function (INT) to drop the decimal portion of the answer. Instead of PRINT 3^4, type PRINT INT(3^4).

2) *IF...THEN.* Comparing numbers in IF...THEN statements creates problems when a result depends on two numbers being exactly equivalent, as in the program below:

```
5 X=8.001-8:Y=.001
10 IF X=Y THEN PRINT "THEY ARE
   THE SAME":END.
15 PRINT "THEY ARE DIFFERENT"
20 END
```

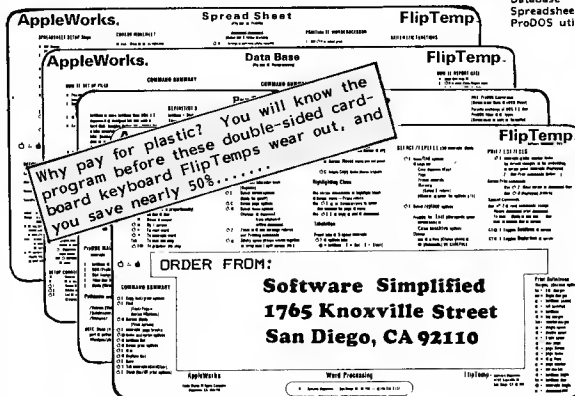
The program will print THEY ARE DIFFERENT because $8.001 - 8$ won't yield .001, but 9.99998301E-04.

If you're dealing with comparisons, substitute the following for line 10:

AppleWorks (TM) Keyboard FlipTamps (TM)

all for **\$9.95**
plus **\$1.00 postage**
& **handling**

*Set has Wordprocessor
Database
Spreadsheet
ProDOS utilities



Please send the following:

AppleWorks Sets*	@ \$9.95	_____
Apple Writer IIe	@ \$4.95	_____
Flight Simulator II	@ \$4.95	_____
GATO (Sub game)	@ \$4.95	_____

In California ONLY, add 6% Sales Tax

Postage/Handling AppleWorks \$1.00

Others .55

Total enclosed (Checks/Money orders)\$ _____

Inc 11.86

*NOW AVAILABLE.... 14-1/2 HOUR APPLEWORKS Cassette Lessons and Practical problems w/DATA DISK and 150 page MANUALOnly \$151.00 plus 15.00 P & H

TOLL FREE ORDER LINE
800-258-0028

3M Diskettes

5 1/4" DISKETTES

SSDDRH	\$.76 Each
DSDDRH97 Each
DSHD 96TPI	2.17 Each

3 1/2" DISKETTES

SS MICRO	\$1.32 Each
DS MICRO	1.76 Each

Sold 10/Box

HURRY - ORDER NOW!
(Limited Offer)

DATA CARTRIDGES

Unique design provided reliability, high storage capacity and long tape life. Compatible with most cartridge systems.

DC1000	\$12.50 ea.
DC600A	\$20.85 ea.
DC300XL/P	\$18.95 ea.

Shipping and Handling: \$3.00/5 data cartridges.

ABSOLUTELY FREE
(We even pay the shipping)
with every order of 100 or more
3M Branded 5 1/4" or 3 1/2" Diskettes
(10/Box)

RECEIVE A COUPON REDEEMABLE FOR
A **FREE 3M DATA DEFENDER™**
DISKETTE STORAGE TRAY
with Security Lock and Built-in Handles
5 Dividers, Rubber Feet
#070 Holds up to 70 5 1/4" Diskettes
#050 Holds up to 50 3 1/2" Diskettes
(Offer Does Not Apply To 3M Highland Diskettes)
\$26.95 Value

WITH EVERY ORDER OF 10 OR MORE DATA CARTRIDGES

RECEIVE A COUPON REDEEMABLE FOR A **FREE DATA CARTRIDGE**
DESKTOP STORAGE FILE HOLDS 10 DATA CARTRIDGES

Features hinged lid, security lock with 2 keys, protective rubber feet, tongue-and-groove closure design and easy-viewing positioning of cartridge labels. (Smoke)
Up to **\$24.95 Value**

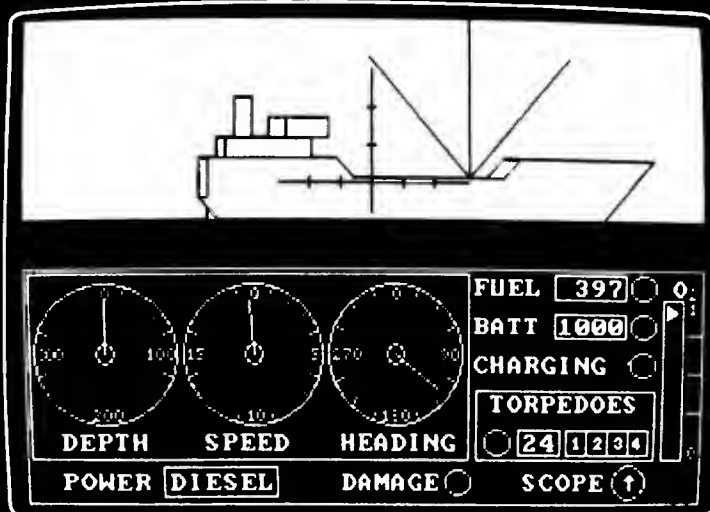
Minimum order \$25.00. A Discount for 300 or more diskettes. Add 10% for less than 50 diskettes. Shipping and Handling: \$4.00 per 100 diskettes. Continental U.S.A., APO/FPO, add \$8.00 per 100 diskettes. Reduced shipping charge for larger quantities. M-residents add 4% sales tax. Prices subject to change without notice. HOURS 8:30 AM - 7:00 PM Eastern Time.

Precision Data Products™
P.O. Box 8367, Grand Rapids, MI 49518
Customer Service & Information: (616) 452-3457
Toll Free Order Lines: MI 1-800-632-2468
Outside MI 1-800-258-0028

GATO™



WW II GATO-Class Submarine Simulation 3-D Graphics with Sound



IDM Version

**Available for Apple IIe/c, Macintosh, IBM PC Series
(includes PCjr.), Commodore 64 & 128, Amiga, and Atari ST.**

SPECTRUM HOLOBYTE, INC., 1050 Walnut, Suite 325, Boulder, CO 80302 (303) 443-0191. Macintosh is a trademark licensed to Apple Computer, Inc. IBM, Apple, and Commodore 64 & 128 are registered trademarks of International Business Machines Corp., Apple Computer, Inc., and Commodore Electronics, Ltd. respectively. Atari & ST are registered trademarks of Atari Corporation. Amiga is a registered trademark of Commodore-Amiga, Inc.

HINTS/TECHNIQUES

10 IF ABS(X - Y) < = .00001 * ABS(Y)

This program prints THEY ARE THE SAME. Use the absolute-value function (ABS) to avoid problems with negative numbers; .00001 indicates that the program should compare just the first five significant digits.

3) *Subtracting close numbers.* When you subtract numbers in which several initial digits are the same (and at least one is a decimal), you'll get inaccuracies, as in the example above, 8.001 - 8.

Another example is the following expression: (987654.1 - 987654) * 100. The correct answer is .1 * 100, or 10. Applesoft yields an answer of 10.0097656. The best way to avoid errors is to multiply the minuend and subtrahend by some factor that eliminates the decimal, then perform the calculations and divide by that factor: (((987654.1 * 10) - (987654 * 10)) * 100) / 10.

4) *FOR...NEXT loops.* If you're using a FOR...NEXT loop in which STEP is a decimal, the loop won't execute the correct number of times. Look at the following program:

```
5 FOR I=1 to 2 STEP .1
10 PRINT I
15 NEXT I
```

The program should print 1, 1.1, 1.2, 1.3, 1.4, 1.5, 1.6, 1.7, 1.8, 1.9, 2—but it won't print 2. The numbers the program calculates are slightly larger, then rounded off by PRINT to five significant digits to produce the numerals on your screen; the number that should be 2 is actually a little more than 2, but the FOR...NEXT loop makes the program stop right at 2.

If you can eliminate decimals from your FOR...NEXT loops altogether, fine, but if you must use them, convert them to whole numbers by multiplication, then divide, as in example 3 above:

```
5 FOR I=10 TO 20
10 PRINT I/10
15 NEXT I
```

This version of your program now produces the steps you're looking for. ■

Write to Vincent O'Connor at 2607 Hayes NE, Minneapolis, MN 55418.

Got a hint of your own? inCider would like to see it. If we can use it in Hints/Techniques, we'll buy it from you. Send your tip to inCider, Elm Street, Peterborough, NH 03458.

CLASSIFIEDS

Digitizers

COMPUTER EYES

- Make custom T-Shirts
- Print computer portraits
- Join our "free" public domain ART GALLERY BBS (201) 469-0049
- Capture real world images
- Digitize video signals from: Video Tape Recorders (VCR's), Video Cameras, etc.

Apple ComputerEyes 109.00
Software interface to:

Print Shop 12.00
Double HiRES (Ile), (Iic) 12.00
Newsroom 12.00

Panasonic Commercial grade B/W video cameras ... 199.00
Special Hookup cabling with instructions 19.00

UNDERWARE ribbons to make custom heat iron-on transfers for T-shirts, scarves, etc. 12.00
Jumbo Color Pens 15.00
For VISA/MASTER CHARGE ORDERS, Call 1 800-227-0158 or Send Check/ Money Order and all inquiries to:

HAL SYSTEMS

P.O. Box 293
Scotch Plains, NJ 07076

Please Note:

Prices include shipping & handling, (continental USA).

One year parts & labor warranty.

For COD orders, add \$5.00

NJ residents add 6%

AVAILABLE for APPLE, ATARI, C-64, AND IBM.

****Dealer Inquiries Invited****

Software

SMARTDOS

The most intelligent new disc operating system for Apple II, II+, //c and //e. Menu driven system automatically allows execution of most commonly used DOS commands. A must for beginning and intermittent programmers. Eliminates tedious typing of commands. Not copy protected; transferable to blank discs for addition of new programs. Works with all existing discs containing files.

Adds astonishing speed and confidence to operations. Ideal programming aid for home and business.

Unbelievable simplicity of operation for new and existing programs. \$19.95 includes formatted 5-1/4" disc and operating manual.

Ohio residents add 5.5% sales tax.

HORIZON TECHNICAL SERVICES
633 South Breiel Blvd., Suite 133
Middletown, Ohio 45044

PROJECT MANAGEMENT AND LOTS MORE...

Everybody's Planner: project management, flowcharts, \$99.95. Welcome! organizational handbook, \$79.95. Design Your Own Home: Architecture, Interiors, Landscape, \$69.95 each. Electronic Drawing, \$49.95. Programming Util: Hi-Res Secrets, \$129.95, Graphics Application System, \$99.95. Ultra Plot (bus. graphics), \$79.95 & \$99.95 (w/DIF). And education, games, self-improvement, sprite hardware & software. All on Apple II series, some on IBM compatibles. Add \$3.00 s/h. VISA/MC/MO or check. Write for our catalog!

ABRACADATA, LTD.

P.O. Box 2352-D
Eugene, OR 97402
(503) 342-3030

TAXES MADE EASY WITH APPLEWORKS

Apple IIe/Ic users—use the power of AppleWorks to compute your federal taxes—quickly and easily. Templates include Schedules A, B, C, D, E, F, G, R, SE, W and Forms 1040, 2106, 2441, 3468, 3903, 4136, 4137, 4255, 4797, 5695, 5884, 6251. Instruction manual included on disk. Send check or M.O. for \$29.95 + \$2.00 Shipping (NJ Res. Add 6% sales tax) to:

T & H SOFTWARE

P.O. Box 578
Garfield, NJ 07026

LABEL DESIGN PROGRAM

Design/print labels at work & home for disks, parts, name badges, photos, etc. On-screen design system lets you make unlimited variety of labels. Save them on disk, reprint when needed. "Input" fields let you set up a standard format, yet edit changeable items each time you print. Set each line's format individually. Serialize & date stamp. Fast. PRO LABEL + 100 starter labels + 20 pre-stored designs : \$24.95 + \$1 shpg. Order today or write for brochure. 128K-Apple IIe/Ic + DMP. Satisfaction guaranteed.

PRO LABEL/AP2

Box 631
Marshalltown, IA 50158
515-752-5681

Statistics

STATISTICS CATALOG!

If you need statistics for Apple II, II+, Ile or Iic, call us. Our catalog contains professional programs for: general statistics, high level Anova, multiple regression quality control, and associated graphics. Write or call now for a free catalog of quality statistics software.

HUMAN SYSTEMS DYNAMICS

9010 Reseda Blvd. Suite 222
Northridge, CA 91324
(800) 451-3030, (818) 993-8536 in CA

STATISTICS/FORECASTING

ELF is a general purpose statpak, including factor and discriminant analysis, stepwise and simple regression, simple statistics, and much more. Creates its own database or converts others. We also have ARIMA (Box-Jenkins) forecasting packages: TWG/ARIMA for statisticians and EASI/ARIMA for others. \$380. NOW \$150.00 EACH. Prepaid, quantity and academic discounts. In business since 1980. Call or write for more information. MC/VISA. Dealer inqs. welcome.

THE WINCHENDON GROUP, INC.

P.O. Box 10339
Alexandria, VA 22310
(703) 960-2587

Insurance

COMPUTER INSURANCE

If your computer is important to you, INSURE IT! SAFEWARE provides full replacement of hardware, media and purchased software. As little as \$39.00 a year covers fire, theft, power surge, earthquake, water damage, auto accident. Call Monday—Saturday

SAFEWARE, THE INSURANCE AGENCY INC.

2929 N. High St., P.O. Box 02211
Columbus, OH 43202
(800) 848-3469 Nationwide
(614) 262-0559 OH

User Group

INTERNATIONAL USERS GROUP

A.S.C.I.I. sponsor of:

Franklin Users Group Int'l
1st Laser
Apple-80 (Apple CP/M)
Apple-16 (Ile and IIGS)

We provide a monthly newsletter, public domain library and technical hot-line. U.S. membership is \$20 a year, \$30 with an expanded newsletter on disk, \$42 with our Disk of the Month. Add \$2 for Canada/Mexico, \$15 elsewhere. Sample Newsletter \$2, public domain software catalog \$5.

A.S.C.I.I.

67N East Wind Rd.
Tecumseh, MO 65760
(417) 679-3526 2-5 Central

Games

WIN AT VIDEO POKER!

Realistic simulation of casino video poker. Unique option allows you to determine the best discard strategy. Do you split Aces for a four-flush? Put probability on your side! Change pay-off rates to match any casino. Detailed hi-res graphics. Any 48K Apple w/disk drive. Send check for \$29.95 to:

GERHARDT SOFTWARE

32600 Concord
Dept. 401
Mad. Hts., MI 48071

Education

SUPER GRADING SYSTEM

"GradeWorks"
A complete AppleWorks based grading system. Superior to other programs on the market. It is fast and very flexible.

The package includes

- On disk information
 - A complete manual
 - Many practice templates
 - Quarter or semester averaging
 - Mid year + final ave. (with exams)
 - Test correcting and grading
- "GradeWorks" a total system, from test correction to final average. Intro price \$29.95 (Ma. + 5% out of USA + \$5)

KATAMA Software

Attention J. Bernier
RFD 304
Edgartown, MA 02539
(617) 627-5145

Graphics

PRINT SHOP USERS CLUB

We help you get the most out of Print Shop! The \$30.00 Membership fee includes: 1200+ Graphics on 6 disks, plus a utility disk, plus the club newsletter-Update Disk #1 (articles and 100+ more graphics). Additional issues of the Update Disk are 3/\$25. Send \$30.00 Membership fee or SASE for graphics list to:

PRINT SHOP USERS CLUB

Box 216
Mercer Island, WA 98040

Taxes

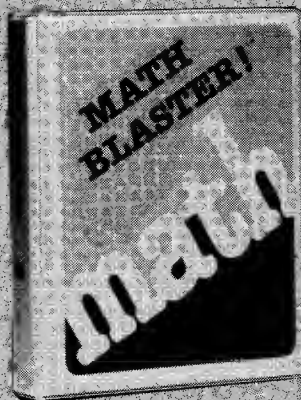
APPLEWORKS TAX PLANNING

If you own AppleWorks, you can estimate your personal income taxes without costly tax software. 1040Works Tax Planner configures AppleWorks' spreadsheet to compute your likely 1986 tax liability, try out tax planning techniques and assess the impact of tax reform legislation on your household. Includes financial organizer to aid in tax preparation. By the maker of TAX-WORKS for AppleWorks, rated easiest 1985 tax program by inCider (April '85). Requires Apple IIc or 128K Ile. \$12.95 plus \$2 postage/handling. Add \$2.50 for COD. In NY add state/local sales tax.

PERSONAL FINANCIAL SERVICES

P.O. Box 1401, Dept. Y
Melville, NY 11747
(516) 261-8652

The Teacher's Choice... Math Blaster!



Apple II
Family,
Macintosh,
IBM
Compatible,
Atari

"Math Blaster is an innovative approach to drill and practice that appeals to the first-through-sixth grade student's fascination with video games while it helps students master basic math facts."

Arithmetic Teacher Magazine

This award winning program is the first choice of teachers, parents and students.

- 1984 Outstanding Educational Product/Parents' Choice Magazine
- 1984 Best Selling New Educational Product/Software Publishers Association
- Recommended/Arithmetic Teacher Magazine
- Recommended/School Science & Mathematics
- Highly Recommended/Book of Apple Software
- Rated: "A"/Software Reports

Building math skills has never been more fun. Math Blaster contains over 600 problems in addition, subtraction, multiplication, division, fractions, decimals and percents.

Four challenging learning activities, including an action-packed game, stimulate children's natural interest in numbers.

The program features an editor for adding more problems, plus colorful graphics, sound effects and more. For grades 1 through 6. **\$49.95**

Ask your dealer for these Davidson programs

- Homeworke^r ■ Spell It
- Speed Reader II ■ Alge-Blaster
- Word Attack ■ Grammar Gremlins
- Classmate

or call us directly for assistance:

(800) 556-6141
(Outside California)

(213) 534-4070
(California Only)

Davidson.

Educational software that works

Davidson & Associates, Inc.
3135 Kashiwa Street, Torrance, CA 90505
Circle 19 on Reader Service Card.

COMING ATTRACTIONS

- *inCider* reviews the Laser 128.
- Hardware and software adaptations for handicapped Apple users
- Organize your holiday greeting-card list with a BASIC data file.
- Buyer's guide to color printers for your Apple II
- *inCider* presents the first People's Choice Award to the most significant Apple II product of 1986.
- Reviews: SpeedDemon, Accelerator II/e, and TransWarp cards; Fontrix; Foundation 1.0; Trio 1.1; and more

inCider

inCider magazine is published monthly by CW Communications/Peterborough, Inc. Entire contents copyright 1986 CW Communications/Peterborough, Inc. No part of this publication may be reprinted, or reproduced by any means, without prior written permission from the publisher. All programs are published for personal use only. All rights reserved.

inCider is a member of the CW Communications/Inc. group, the world's largest publisher of computer-related information. The group publishes over 50 computer publications in more than 20 major countries. Nine million people read one or more of the group's publications each month. Members of the CWCI group contribute to the *Computerworld News Service*, a daily on-line service offering the latest on domestic and international computer news. Members of the group include: ARGENTINA'S *Computerworld/Argentina*; ASIA'S *Asian Computerworld*; AUSTRALIA'S *Computerworld Australia*, *Australian PC World*, and *Macworld*; BRAZIL'S *DataNews* and *PC Mundo*; CHINA'S *China Computerworld* and *China Computerworld Monthly*; DENMARK'S *Computerworld/Danmark*, *PC World*, and *Run* (Commodore); FINLAND'S *Mikro*; FRANCE'S *Le Monde Informatique*, *Golden (Apple)*, *OPC (IBM)*, *Theo-reme*, and *Distributive*; GERMANY'S *Computerwoche*, *Infowelt*, *PC Welt*, *Computer Business*, and *Run*; HUNGARY'S *Computerworld Informatika*; ITALY'S *Computerworld Italia* and *PC Magazine*; JAPAN'S *Computerworld Japan*; MEXICO'S *Computerworld/Mexico*; THE NETHERLANDS' *Computerworld Netherlands* and *PC World*; NORWAY'S *Computerworld Norge* and *PC Mikrodata*; SPAIN'S *Computerworld Espana*, *PC World*, and *Commodore World*; SWEDEN'S *Computer-Sweden*, *Mikrodata*, and *Svenska PC World*; SWITZERLAND'S *Computerworld Schweiz*; THE UNITED KINGDOM'S *Computer News*, *PC Business World*, and *Computer Business*; VENEZUELA'S *Computerworld Venezuela*; THE U.S.'S *AmigaWorld*, *Computerworld*, *inCider*, *InfoWorld*, *MacWorld*, *Micro Marketworld*, *PC World*, *Run*, *80 Micro*, *Focus Publications*, and *Network World*.

Problems with Advertisers: Send a description of the problem and your current address to *inCider*, Route 101 and Elm Street, Peterborough, NH 03458, attn. Rita Rivard, Customer Service Manager. If urgent, call (800) 441-4403.

Problems with Subscriptions: Send a description of the problem and your current and/or most recent address to: *inCider*, Subscription Department, P.O. Box 911, Farmingdale, NY 11737. Or call (800) 645-9559, (800) 732-9119 in New York, between 9 a.m. and 5 p.m. E.S.T., Monday through Friday. If you have a problem with payment, please have your mailing label and your cancelled check or credit card statement in front of you.

Change of Address: Send an old label or a copy of your old address and new address to: *inCider*, P.O. Box 911, Farmingdale, NY 11737. Please give eight weeks' advance notice.

Microfilm: This publication is available in microform from University Microfilms International. United States address: 300 North Zeeb Road, Dept. P.R., Ann Arbor, MI 48106. Foreign address: 18 Bedford Row, Dept. P.R., London, WC1R4EJ, England.

Dealers: Contact Raino Wirein, Direct and Newsstand Sales Manager, *inCider*, Route 101 and Elm Street, Peterborough, NH 03458. Call (800) 343-0728.

Back Issues: Send \$3.50, plus \$1.00 postage for each copy to *inCider*, Back Issues Dept., Route 101 and Elm Street, Peterborough, NH 03458. For ten or more copies postage is a blanket \$7.50. To order by telephone using VISA, MasterCard or American Express call (800) 258-5473 from outside New Hampshire, or 924-9471, ext. 136, within New Hampshire.

Submissions: We're always looking for first-class manuscripts at *inCider*. We'll consider publication of any material for the Apple. Guidelines for budding authors are available—just address an envelope to yourself and include it with your request. Mail manuscripts, queries, or requests for writers' guides to: *inCider* Editorial Offices, Elm Street, Peterborough, NH 03458.

inCider Reader Service

To receive more information on the products and services advertised in this issue, please turn to reader service card.

MultiScribe™

Creative Writing for Your Apple® IIc™/IIe™

Now your Apple IIc or IIe can offer you the type of creativity that you might have thought was available only with a Macintosh.™ MultiScribe is a full feature word processor that uses double hi-res and proportional spacing to give your Apple all the character of a Mac.

You supply the imagination, MultiScribe does the rest.

There are no complicated commands to learn. Easy to use pull-down menus provide you with a wide range of type styles, character sizes, and text formatting options. You can choose the typeface that's right for your text—or create your own custom fonts with MultiScribe's font editor. And MultiScribe gives your writing style—any style, from bold and underline to italic, outline and shadow—just like MacWrite.™



Pictured above: MultiScribe's font editor.



If you're afraid of mice, don't worry.

With MultiScribe, you have the option of using a standard keyboard or a mouse. Use your mouse to pick and click commands from the pull-down menus ... or use the arrow keys for "keyboard mouse" action. Each MultiScribe option has a keyboard equivalent displayed right on the menu, giving you the best of both worlds.

Don't upgrade your old computer, just your old files.

MultiScribe works with any IIc or IIe equipped with extended 80 column card and most dot-matrix printers, including Imagewriter,™ Epson,® and Okidata.® You can even use MultiScribe to customize files created by other word processing programs.

And best of all—the price.

MultiScribe is available for only \$59.95. Just complete and mail the coupon below or call our toll-free number, 1-800-233-4088 (in Texas call 1-713-771-4627).

\$59.95

+ \$3.00 shipping & handling
Texas residents add 5 1/8% sales tax.

Outside U.S. add \$10.00.

Make check or bank order payable to:
StyleWare, Inc.

Name _____

Street _____

City _____

State _____

Zip _____

☐ MasterCard® ☐ Visa ☐ Check/Money Order
 Card# _____ Exp. Date _____

☐ 5 1/4" Diskette ☐ 3 1/2" Diskette

MultiScribe™

Creativity at your fingertips.

StyleWare, Inc.

6405 Hillcroft, Suite 201, Houston, Texas 77081

In addition to all this, optional services are available which can save you loading to...
 But that's besides the begin to...
 And, you finance...

BID PROPOSAL

The following information constitutes our bid for the complete distribution rights for the Southwest region for StyleWare's new word processing program:

Mr. Steve Thompson
 Director of Advertising
 StyleWare, Inc.
 6427 Hillcroft, Ste.
 Houston, Texas 77081

Dear Mr. Thompson:

Thank you for your inquiry. Our graphic design capabilities have helped many successful companies with their marketing programs.



EVERY GO
 EVERY GOO
 every goo
 every goo
 EVERY

EDITORS' CHOICE

VIP Professional: Lotus Blossoms for the II



If this were an MS-DOS magazine, a new Lotus 1-2-3 clone wouldn't be worth writing about. Lotus Development Corp.'s multifunction spreadsheet is the dominant PC business program, and has inspired a flock of imitators. But this is *inCider*, and the arrival of a long-awaited 1-2-3 clone for the IIc and enhanced IIe is big news. SuperCalc3a hasn't managed to break AppleWorks' market headlock, but **VIP Professional** could become serious Apple users' most wanted program.

Despite widespread misconceptions (VIP Technologies' ads begin, "There's an all-new Apple II, [with]...a new 16-bit CPU"), VIP Professional doesn't require a 16-bit chip, though it recognizes 65C816 coprocessors. It works fine with a 65C02, given a 256K memory-expansion card from Applied Engineering or Checkmate (using the RamWorks or MultiRam standard, not the Apple/AST/RamFactor design). Two disk drives are enough, though a UniDisk 3.5 and mouse are welcome.

So is a knowledge of 1-2-3. Except for the larger worksheet (256 columns by 8192 rows) of Release 2, VIP is a remarkable match for Release 1A, using identical slash-and-letter commands to navigate Worksheet, Range, and other familiar menus and sub-menus. Once they adjust to the different keyboard (open-apple 1 through 0 mimic the function keys F1-F10, for instance), IBM users will be right at home—using the same files, if they care to link a PC and Apple via modem.

There's the same killer spreadsheet, with copious math and financial functions and flexible business charts (like Lotus, VIP uses a separate program to print graphs). There's the same spreadsheet-style data base and the same awkward but invaluable macro commands. As for Lotus' famous fast response, a TransWarp card or IIgs would help: VIP's scrolling and screen redrawing seemed sluggish in our preproduction copy, though the program did recalculate a 1000-cell worksheet in 50.8 seconds, to AppleWorks' 53.5. (The real Release 2 did the job in 26.5 seconds on an XT clone.)

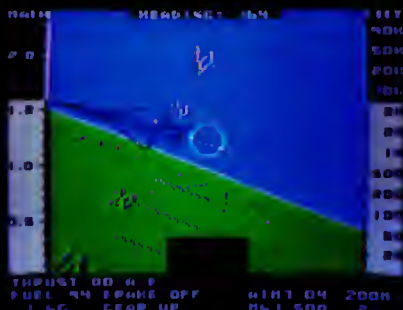
To make up for the 8-bit blues, VIP rewards mouse users with Macintosh friendliness. While it responds to Lotus keyboard commands, the commands also appear on pull-down menus, with scroll bars, dialog boxes, and mouse-controlled cell pointing for range-marking convenience that makes VIP a mix of three worlds (Apple II, Mac, and IBM).

According to Editor in Chief Debbie de Peyster, "VIP Professional is the first spreadsheet to draw a crowd around the computer during testing in the *inCider* office. The existence of a Lotus-caliber product on an Apple II clearly says that the II is an important machine in productivity applications."

Review Editor and XT-clone owner Eric Grevstad says, "VIP's dialog boxes are better with a mouse, but keyboard users will be amazed by its fidelity to 1-2-3—it's significant both in itself and as a gateway to IBM Lotus files and templates. Release 1A may not be state-of-the-art next to dreams of Microsoft Excel on the IIgs, but VIP might be the most powerful Apple II program ever."

VIP Professional costs \$249.95, from VIP Technologies Corp., 132 Aero Camino, Santa Barbara, CA 93117, (805) 968-9567. See our review in January. ■

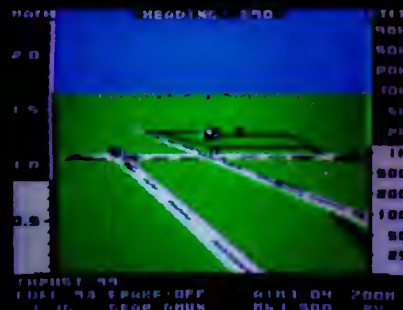
Editors' Choice singles out one product each month that the inCider editors feel is a significant addition to the Apple II family of products. Products may not be available yet for retail distribution.



F-16 Dogfight with Enemy MiG-21 Fighter



F-18 on the Deck of a Nimitz-Class Aircraft Carrier (Control Tower View)



F-16 Low-Level Flight over Home Base

Jet

From the author of Flight Simulator II comes a new dimension in realism. Jet simulates two fast and maneuverable supersonic jet fighters, a land-based F-16 or a carrier-based F-18. The simulator includes modern electronic flight instrumentation and the most advanced weaponry available. Jet's simulation sophistication, combined with excellent visual attitude references, makes it truly enjoyable to fly.

Easy aircraft control coupled with ballistic thrust gives you the kind of aerobatic maneuverability only a modern jet fighter can provide. Jet's attitude indicator is easy to read no matter what your orientation. A full-screen out-the-window view helps you get the most out of Jet's excellent flight controls. And that's a major consideration when flying at speeds in excess of 1300 MPH.

With Jet you can fly through either structured or non-structured environments. Engage in a deadly variety of combat missions. Explore the wargame territory, or relax by practicing precision aerobatic maneuvers. Load in scenery from optional United States Scenery Disks. You can even load in scenery off the Flight Simulator II disk.

New high-performance graphic drivers provide beautifully detailed scenery in either day or night-flight modes. You can look forward, left, right, rearward, or straight up out of the cockpit with a single keypress. The Jet simulator even includes a special view-magnification feature that lets you zoom-in to identify objects or details at a distance.

Jet will run on any Apple II computer with 64K memory, one disk drive, and either color or monochrome monitor.

See Your Dealer ...

or write or call for more information. For direct orders please enclose \$39.95 plus \$2.00 for shipping and specify UPS or first class mail delivery. Visa, MasterCard, American Express, and Diners Club cards accepted.

Apple II is a trademark of Apple Computer, Inc.

subLOGIC
Corporation
713 Edgebrook Drive
Champaign IL 61820
(217) 359-8482 Telex: 206995

ORDER LINE: (800) 637-4983

(except in Illinois, Alaska and Hawaii)

Open 7 AM to 9 PM Central Time

"My computer just talked to me!"



Announcing a breakthrough program for helping students learn to read and write: *Talking Text Writer*, from Scholastic and Street Electronics!

There is now a brand-new way your Apple computer can help your students learn to read and write.

It's called *Talking Text Writer*, and what makes it an important development for education is that it marries word processing with speech!

Your students type in their own words, their own stories, their own experiences...

...and *Talking Text Writer* says it back to them, aloud!

More than five years of research has proven that *Talking Text Writer* is a dramatically effective teaching tool for improving reading and writing skills, both among new learners and among remedial learners.

With this program, students not only see their words, their stories, their ideas on the computer screen, as with any word processor.

They also hear what they have created, one letter at a time, one word at a time, or only when they want a whole story repeated back to them. This aural component—immediate feedback and lots of fun, too—is a key factor in the learning-to-read process as well as a powerful stimulus to writing.

Talking Text Writer. A single package that includes both the hardware and the software you need to experience this learning breakthrough in your own classroom and home.

- An amazing word processor that enables your Apple

computer to speak back anything and everything your students type into it.

- Specially-created features for young learners, including large type (20-column) display option, a rainbow of color choices and large type print-out capability.
- A Street Electronic speech synthesizer*
- A User's Handbook that provides scores of classroom-tested suggestions for adapting *Talking Text Writer* to whatever reading program you are currently using...and to each student's individual needs.

Find out more about this innovative development, and what it can mean to your reading program. Just clip the coupon.

*Echo +™ for Apple IIe and Cricket™ for the Apple IIc

Yes! Send me more information about the breakthrough new program, *Talking Text Writer* and the Street Electronics synthesizer.

Name _____

Address _____

City _____

State/Zip _____

Mail to: Scholastic Software, P.O. Box 7501
2931 East McCarty Street, Jefferson City, MO 65102

This offer valid in U.S. only. Canadian Residents please write Scholastic Publications, 123 Newkirk Rd., Richmond Hill, Ont. L4C3G5

Scholastic Software™
The Most Trusted Name in Learning

610 I

Circle 73 on Reader Service Card.

STREET ELECTRONICS CORPORATION